2. West Africa:

When the Xylophone Speaks

HEATHER A. MAXWELL

Xylophones are among the most commonly used and appreciated musical instruments in West Africa. They exist in many shapes, sizes, and sonorizations, including trough xylophones, leg xylophones, frame xylophones, and both free and fixed xylophones. Their range can extend from a mere one and one-half octaves to three octaves of five- or seven-note scales, with timbres anywhere from high and hollow to low and resonant. By far the most prevalent xylophones, those considered here, are the ones with fixed keys and frames from the Mande and Voltaic regions. Although every West African language and dialect has its own local name for xylophones, they are commonly known in French-speaking countries by the term *balafon* and in English-speaking countries by their English name.

Because of their special sound and deep connection to regional and ethnic identity, xylophones are highly valued by most sectors of society. Spiritualists, oral historians, politicians, women, and boisterous youth all employ the xylophone for their various life activities. The instrument is used to animate dances, weddings, and storytelling events; to broadcast social commentary; and as a symbol of national, ethnic, and individual identity.[1] Xylophones and xylophonists are often attributed important roles in the rise and fall of West African civilizations, and their continued performance in contemporary life keeps these memories alive. The well-known Malian epic *Sundiata*, for example, which is told and retold through the songs of Mande oral historians known as *griots* or *jeli*, depicts the xylophone's critical role in the establishment of the Malian Empire in the thirteenth century.

While xylophones are discussed in this paper in relation to particular ethnic and lingual groups, there are incredibly active trade routes between these groups, who exchange musical ideas, practices, and instruments. In fact, the entire relevance as to which ethnic or lingual group plays x or y xylophone and in x or y fashion is less important in this study than how people use them, appreciate them, and create them. Learning about xylophone music culture provides a window into the diverse complexity of West African societies and worldviews. Thus, I invite the reader to explore the world of xylophones by focusing on its artists, musical aesthetics, and importance as a social tool for spiritual and human communication.

The Mande and Voltaic Peoples

The Mande and Voltaic peoples covered in this study encompass millions of individuals in the West African savanna regions. The Manding constitute the majority of the population in Mali, Guinea, Guinea-Bissau, and The Gambia.[2] Manding peoples are also numerous in Côte d'Ivoire, Senegal, Sierra Leone, Ghana, and Burkina Faso; smaller groups are found in Liberia, Benin, Nigeria, and Niger. The Mande people include such ethnic groups as the Bambara, Dogon, Gouro, Jula, Kassonke, Malinke, Mandinka, Maninka, Soninke, Sossou, Wangara, Wassulun, Yacouba, etc. (School of Oriental and African Studies 1972, vol. 3). The Voltaics (Birifor, Bobo, Bwa, Bwamu, Dagara, Lobi, Minyanka, Samo, Senufo, Sisaala, etc.) are located in the areas of southeastern Mali, northern and northeastern Côte d'Ivoire, northwestern Ghana, and southern Burkina Faso.

In West Africa, the system of ethnicity is complex, and in order to understand it, one must take into account three main points: (1) the ecological and political changes (such as grand empires, long-distance trade across the Sahara Desert, and their impact on population movements); (2) the influence of the different slavery systems, mainly domestic captivity (the most important before the slave trade by Western countries); and (3) the alliances during wars and periods of penury. These have all contributed to the creation of new ethnicities (such as the Wassulun, Gouro, and Jula, for example) and the redefinition of others.

This flexibility and negotiability of ethnic identity was already in progress for centuries before colonialism imposed itself and fixed its own criteria for ethnic identity on top of those already in existence. In many cases, the colonial criteria for determining and documenting ethnic groups was completely unrelated to the ways that the people defined themselves. The Lobi from northern Ghana, for example, found their name used as an umbrella term for several smaller ethnic groups during the colonial

era. Thus, like the "overnight" creation of countries belonging to the French, English, or Portuguese colonies, which disregarded and often cut across native ethnic and political territories, many ethnic groups were created.[3]

In certain regions some Mande peoples share the scalar system of the Voltaics. This simple fact concerning xylophones brings to light an important aspect of ethnicity in West Africa that is often overlooked. Ethnic groups define and redefine themselves in response to different social, economic, religious, and political forces.

Xylophones and Xylophonists

Technically speaking, Mande and Voltaic xylophones consist of wooden sets of multitone keys with individual gourd resonators. The keys are mounted and fixed over a wooden, rectangular frame and consist of a series of pitched tones from low to high. Xylophones are played by striking or tapping the keys with mallets made from light wooden sticks and soft rubber heads. The instruments are, with only few exceptions, played by men, sometimes as solo instruments accompanying vocal music or in ensembles consisting of several xylophones and other instruments. Depending on the context, xylophone music may treat a wide range of secular, religious, and historical topics.[4] Both Mande and Voltaic xylophones also play a critical role in ritual and sacred events, which, out of respect, are generally not revealed openly to international and public view. It is however, common knowledge in several regions in West Africa that funerals and spiritual communication seances (or possession) cannot proceed without xylophone music.

The structure of xylophone frames exists in two basic forms: the keys are either built parallel to the ground or at an angle, with one end higher than the other by several inches. Since the keys are fixed to the frame, the tonal arrangement of pitches and intervals on each instrument remains constant (as opposed to other African xylophones with "free keys" that can be moved around). The tonal organization of most flat-framed xylophones is based on the equidistant heptatonic division of the octave (the octave is divided into seven equal intervals). The octave in the angular frames is pentatonic (divided into five intervals). These intervals may be equidistant or arranged in steps that correspond roughly to Western intervals of major and minor seconds, thirds, fourths, and so on. In both cases, the player sits or stands facing the xylophone so that the keys to his left have the greatest length and lowest pitch. With the slanted frame, the smallest and highest-pitched keys are at the low end of the frame, on the right (fig. 2.1).

In general, the flat-framed, heptatonic xylophone is played by most Mande groups found in Mali, Senegal, The Gambia, and Sierra Leone (Malinke, Mandinka, and Maninka). The angled-frame, pentatonic xylophone is mostly found among the Voltaic peoples in regions of Mali, Côte d'Ivoire, Ghana, and Burkina Faso (Bobo, Bwamu, Dagara, Lobi, Senufo, and Sisaala).[5] Exceptions to this general scheme are, of course, not uncommon, given the high rate of interaction between various groups in West Africa. Bambara xylophonists from Mali, for example, who are a Mande people, play the angled-frame type (*balaniw* or *balabaw*) similar to their southern Senufo and Minyanka neighbors.

In Mande and Voltaic xylophone traditions, the most experienced and respected players build their own instruments, those for their students, and others for individuals who commission them for various reasons. Xylophonists also play the important role of general band leader. In short, they are the bearers of their region's xylophone music repertoire and performance practices. Since music is not written down, xylophonists must remember all of its aspects, from song texts (folk, secular, sacred, and historical), to xylophone patterns and rhythms to other instrumental and percussion parts within the total ensemble. In addition to these responsibilities, the best players are also the innovators and animators of new styles and social contexts.

Who are xylophonists and how do they learn their skills? Xylophone players all have certain shared characteristics, but there are also regional and individual differences. In the Mande culture, for example, almost all xylophonists come from a professional class of musician families. Most xylophonists from Voltaic culture groups, however, may come from any family. Although there are always exceptions to "rules of tradition" in every culture, the Voltaic tradition offers a much broader spectrum of possibilities for individuals who want to become xylophonists, both in terms of who is eligible and how one learns.

The relatively strict social rules regarding who can and cannot be a xylophonist among the Mande (especially

2.1 Xylophone. Bambara and Minyanka peoples, Central Mali. Constructed by Duga Koro Diarra, 1991. Stands roughly 14 in. high from the ground at the left end and gradually slopes down to reach 8 in. at the right end. The bass keys (positioned to the left side of the player) measure approximately 23 in. long; the highest soprano key is about 12 in. long. Photograph by Heather A. Maxwell, 1995.

the Bambara, Malinke, and Maninka groups) is explained in large part by mythical accounts of the first *balafon* in *Sundiata*. Believed to have been a gift from a spirit (*jin*) to the king of Sosso, Soumangourou Kante, the xylophone was discovered by one of his adversary's messengers (a *griot* named Kouyate) while the king was absent. The *griot* began to play it and was so enchanted with its sound that he did not notice the king's surprise return. Soumangourou, who had promised the *jin* to kill anyone who touched the instrument, was so impressed by Kouyate's talent that he forgot his promise and said to Kouyate, "*Balafo segue*" (Continue playing! Continue). From that time on, Kouyate was called *balafo segue*, and the *balafon* naturally became the instrument of the *griots*. Most non-*griots* (determined by family name) do not touch the *balafon*, and in the case where a non-*griot* individual insists on becoming a musician, he normally chooses another instrument to play.

Personal narratives of several xylophonists from Voltaic regions reveal that among the Dagara, Lobi, and Sisaala groups some individuals are believed to be born with the talent and will to be xylophonists, while others choose to learn it as their primary instrument or to be well-rounded musicians. The story of one such xylophonist, a man from the upper west region of Ghana named Bernard (Sogolinso) Woma, describes how his unusual birth position was a signal to his family and the community that a predestined xylophonist had been born.

In an interview with Woma in 1996 he explained that knowing how to play the xylophone just "came with him." When he was born, his thumbs were folded in his fists, with just the tips protruding through his index and middle fingers. His father, who was alarmed by the hand position of his newborn, took him to a spiritualist for consultation. The spiritualist quickly explained that Woma was destined to be a xylophone player and instructed his father to buy two xylophones and keep them in the house for his son. At the age of two, Woma began to play. Xylophonists in this region hold their mallets in-between their index and middle fingers as illustrated in figure 2.2.

Minyanka xylophonists, who have assimilated aspects of xylophone music culture from their Mande neighbors, have an even more liberal set of "rules." Like the Voltaics, they are not exclusive to particular clans or families and are thus free to play whichever instrument they wish. Going one step beyond this freedom, Minyanka people do not consider ethnicity as a relevant criterion. They do not have to be Minyanka nor do they have to live in Minyankala to be part of Minyanka xylophone music culture. According to Duga Koro Diarra, a Bambara xylophonist from the Minyanka area and my teacher, any man is technically eligible to become a xylophonist provided that he possesses talent, discipline, and desire.[6]

Within most Mande groups xylophonists learn to play within their *griot* families. They grow up surrounded by xylophone

2.2 Xylophonist Kakraba Lobi, from northern Ghana, singing the secular song "Cat and Mouse." Photograph by Heather A. Maxwell, Accra, Ghana, 1986.

music and begin learning and playing at a very early age. Assimilationist groups like the Minyanka, and most Voltaics, have a wider variety of types of instruction. For example, in Diarra's region, young xylophonists must go through years of apprenticeship before they are acknowledged as genuine players. When a student has shown sufficient knowledge and skill, Diarra constructs him a xylophone, hand-carries it to the graduate's house, and places it publicly in his home, declaring thus that the apprenticeship is concluded and the student has become a master in his own right. In other parts of Minyankala, xylophonists simply learn to play by watching, experimenting, and applying self-discipline.

Kakraba Lobi, from northern Ghana, learned on his own by watching xylophonists for several years until one day he simply began playing. People took notice of his enormous talent immediately, and since that time he has been a xylophone player. Woma learned on his own mostly by listening to other people's songs. He would then go home and play them. Most of the time the music "just sticks in his head" and is "all there" when he wants to play it for the first time (personal communication, 1997).

Building a Xylophone

Since xylophones are not mass-produced in the sense of modern technology and calibrated machines, building a xylophone is a specialized art. Xylophonists must choose their materials carefully. Everything used to build a xylophone comes from the natural environment, so this activity is closely connected to environmental and climatic changes. For most xylophonists, cutting down trees for the wood is something for which they are personally accountable, and thus requires special sacrifices that thank nature for providing the necessary materials.

During my own field research and apprenticeship from 1989 to 1991 with Diarra, I followed him along through the process of constructing a xylophone. Choosing the wood for the keys is an activity that requires a highly specialized knowledge of the forest and trees. During one visit with Diarra, he took me to the *bala jiri yoro la* (the place of the *bala* trees) to show me where the wood for the keys originates and how the trees look. Locally known as *n'goni*, these trees were all growing together in what appeared to be a naturally formed orchard. He explained that these trees grew only in this particular place in and around Sineni and that the next largest grouping existed near N'Tòssoni, a village some thirty-five miles away.

I admired the trees, tried to memorize their form, and then asked Diarra how he determined which ones would make good xylophones. He explained very simply that they tell him when they're ready. *"U bè fo ne ma dè"* (They tell me), he said. To demonstrate what he meant by this, Diarra approached the nearest tree, placed one ear on the trunk, paused, and said, *"A ma sè folo"* (It's not ready yet). He continued this process until, a few trees later, he apparently heard one that sounded ready.

When he needs to build a xylophone, Diarra explained, he comes to this orchard, cuts down a tree, and then chops the wood up into slabs of approximate key sizes. It is usually during this time that he sacrifices something to show his respect and thanks for having cut the tree. As is common throughout West African xylophone construction practice, Diarra used the key measurements of an already existing xylophone as the model for his new one. Once the keys are cut, he places them in a special oven, which cures them by smoke and fire over approximately one week. During this time the frame is constructed, and when the keys are ready, they are mounted and securely tied to the frame with goatskin.

Gourds are another important feature of West African xylophones that xylophonists must select and treat carefully are gourds. Each key has a corresponding gourd tied carefully beneath it. Depending on the regional crop and seasonal conditions, the gourds are round or oval and range in size from very small to extremely large (3 to 15 inches in diameter). The tops are cut off at the narrowest part, then the gourds are cleaned out and fastened tightly to the supporting frame structure so as to fit snugly just underneath each key. The smallest gourds correspond to the smallest and highest-pitched keys, and the largest to the bass keys (figs. 2.3a,b).

Because the gourds function primarily as resonating chambers, their size and

2.3a,b Xylophone gourds. Bambara and Minyanka peoples, Central Mali. Photographs by Heather A. Maxwell, Bloomington, Indiana, 1995.

shape are important factors in selection. The gourds that Diarra used for the xylophone he was constructing came from the surrounding bush. When the frame and keys were mounted, children brought Diarra a large pile of gourds with the tops cut off and the interior cleared out. He selected sixteen gourds (since there are sixteen keys) that ranged from small to large by gradual increments and that had a well-formed roundness so as to emphasize and properly resonate the gradation of pitched keys. In addition to visually examining the gourds, Diarra also listened to them. He picked up each gourd, tapped it on his knee, and put its open end next to his ear.

After selecting the gourds, Diarra drew three small circles on the surface of each one with pencil, which served as the outline for holes that I and other less-experienced participants cut out. After attaching the gourds to the frame and tuning the keys, the holes in the gourds were covered with a spider egg-sac membrane, which was affixed permanently with glue from melted tree sap. The vibration of these membranes produces a buzzing effect when the keys are struck, much like the sound of a kazoo. Today, cigarette paper or tissue paper for wrapping gifts and clothes is also used in place of the spider egg-sacs.

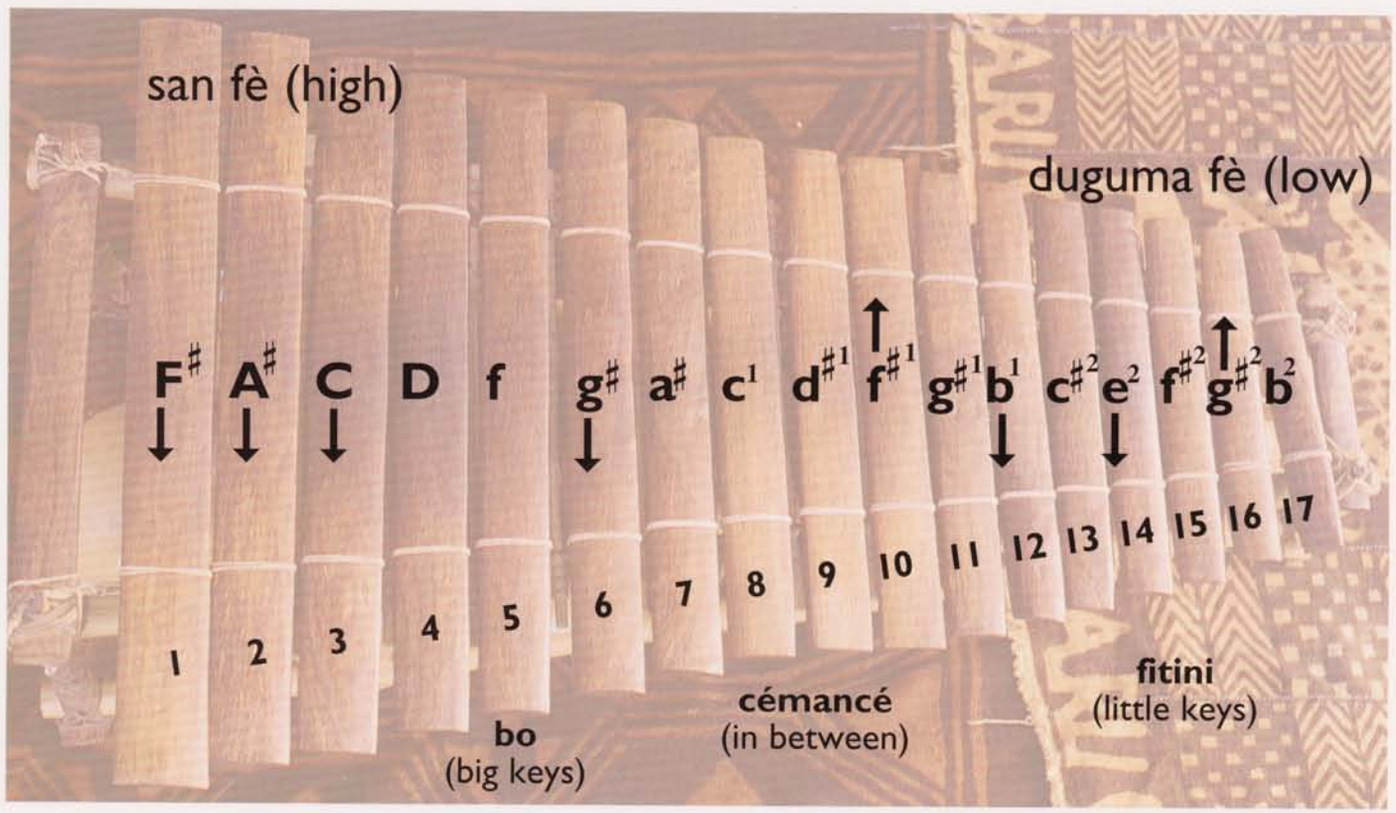
Woma's method of tuning the gourds to the wood is slightly different from Diarra's, but it has the same effect. He is careful in how he cuts the tops off the gourds because the wider the gourd is cut, the higher the sound. He explains that he has difficulty sometimes finding good gourds to use for the lower-registered notes because the quality of gourds for xylophones depends on the season and the harvest. If the smaller gourds do not "line up" with the pitch of the bass key, Woma adds cow dung and glue to the hole to make it smaller, and thus lower pitched. The gourds on his xylophone are thirty-two years old and in perfect condition. They can last, he says, providing that they are well protected and cared for.

The number of xylophone keys on West African instruments ranges anywhere from eleven to twenty-one depending on regional cultural preferences and ecological factors. Techniques and systems of tuning the keys are particularly interesting because they show how xylophonists tune their instruments primarily in terms of relationships, rather than to specific pitches as measured by a constant, universal tone such as the tuning fork in most Western music traditions. By learning what xylophonists listen for when they tune, we also discover that musical sound can be culturally constructed, which sometimes prevents people of one culture from literally "hearing" important musical sounds of another.

In Mali, Diarra's system of tuning a new xylophone involved a long and concentrated series of alternate tapping and striking, from one key on the model xylophone (one I brought to him from further south) to its counterpart on the new one, and from adjacent intervals on the model, back and forth several times to the new one. He started from the highest-pitched keys and worked his way to the lowest. He adjusted the pitches (and intervals) by scraping either the top end of the keys, the underside, or the top middle of the key. After this process, which lasted several hours, Diarra and I affixed the egg-sac membranes onto the holes in the gourds, and the xylophone was complete.

Considering the significant care and amount of time Diarra used in tuning the xylophone, one might assume that precision of pitch and interval agreement is what he was trying to achieve. However, during my discussions with him, I discovered that pitch was not necessarily his primary concern. In this case, keys are identified by their spatial relationship to the ground, rather than by their pitch.

During the construction process, there was great confusion surrounding the identification of the keys. I referred to the higher-pitched keys as "*san fè*" (which can mean "toward the sky" or "high," depending on the context). Yet, when I did so, Diarra, Issah (Diarra's apprentice), and others present repeatedly turned their attention to the lower-pitched keys. After discussing the



2.4 Approximate pitch measurements of xylophone keys in Minyanka and Western tuning systems. Bambara and Minyanka peoples, Central Mali. Original photograph and analysis by Heather A. Maxwell, Indiana University, 1995.

conflict, I learned that the higher-pitched keys were referred to as "*duguma fè*" (toward the ground) and the lower-pitched keys "*san fè*" (toward the sky) because of their relative physical proximity to the earth and the sky. (Remember that the frame is tallest or closest "toward the sky" at the bass-key end, and it slopes down "toward the ground" as the keys get smaller and higher pitched). As figure 2.4 illustrates, the words used to describe the sound of these keys are *fitini* (little) for the high-pitched keys and *bo* (big) for those with low pitches. This situation suggests that pitch is certainly recognized in the keys, but that it is not necessarily the primary criterion by which keys are identified and considered.

Woma's method for tuning utilizes even more conceptual tools than Diarra's. Woma's relationships include spatial as well as tonal family ones. He also refers to his "high" and "low" keys in terms of their physical height from the ground, but in addition his conceptual tools include a set of two-syllable words whose tonal contour (like high-low or low-low) match the tonal contour of the intervals comprised in the scale, and a set of relationships defined in terms of family members that are used as models for intervals. Thus the two work to reinforce each other, incorporating both concrete sounds and abstract concepts to tune the xylophone.

Beginning from the bass key (his "high"), the tonal contour of the word *tig-be* should match the tonal contour of the intervals between keys 1 and 2. The word for key 2 is *kye-gya*, and from key 3 up to the octave the words are *gang-kye*, *kpng-kpng*, *pog-zre*, and then back to *tig-be* again with the octave. The last key of the xylophone, regardless of how many keys it has, is either *zag-bal* (with no resonating gourd), or *zag-bal tuure* (with gourd). In both types, the keys are not usually played by the mallet but reserved for the stick part to tap out rhythms.

For an explanation of the family kinship concept involved in tuning his xylophones, a direct quotation from one of my interviews with Woma captures the sense better than paraphrasing.

> The most important intervals are "friend" and "senior brother." You always tune each key to the next using the same concept of "friend." You never tune say the first and third key by its interval. Just move from one note to its neighbor, tuning it according to the same friend interval. They should be exactly alike. When you arrive at the senior brother, you check it with its brother (the one you started from.) If they are not "in line" then you decide which note doesn't sound quite right between the two, and correct it. But you never touch the other intervals in between the octave because they are already fine. Just adjust one of the brothers.
>
> To finally recheck, you play the two senior brothers together to make sure that they are "in line." After the first "set" (octave) is checked, then the rest of the octaves are easy. You can check each note by its relative senior brother, which has already been laid out in the first octave. So you could then play the second key of the second octave with its senior brother from the first octave (personal communication, 1997).

As we were communicating on the phone, Woma quickly stopped talking and started playing his xylophone over the line so I could hear and understand how this tool worked.

During my participation in Diarra's tuning session in Mali, I discovered that in some local xylophone traditions there are pitches and sounds that people not familiar with Minyanka xylophone music culture do not automatically hear. This short anecdote of my personal experience with Diarra shows that musicians hear pitches that are "hidden" in the sense that first, they are not actually embodied in a physical key but are produced by the simultaneous strike of two adjacent pitches. Second, although acoustically produced, some pitches are perceived differently, depending on cultural orientation or familiarity of the listener.

While living in N'Tòssoni, one of my biggest frustrations with playing and studying the xylophone was that I experienced great difficulty in trying to notate the music. Interested in practical matters like notating songs and pieces for memorization purposes and composing new pieces on my own, I was not only unable to determine the appropriate intervals on which to base a particular piece but also had trouble transposing blues songs into the tonal system of the xylophones, namely the bass octaves.

One day in particular, when I could not locate a minor third near the bass notes, I remarked to my instructor, Brehman Mallè, that the xylophone was "missing" the minor third from the lowest A-sharp (there is no C-sharp key on the instrument). I played the third pitch, then the fourth, and then sang the interval in between that I wanted to play. I said, "You see, you don't have this note!" Mallè quickly looked at me, smiled, and said, "Oh yes we do, it's here!" He played notes 3 (C) and 4 (D) together and what resulted was a clear C-sharp. He asked me if I could hear it then, and after a few repetitions (and several other influencing voices), I finally did. Once having heard it, I noticed that it was quite clear.

Computer-generated analysis of this phenomenon shows that this "hidden" pitch is intentionally created through skillful tuning techniques to produce an acoustic behavior know as beating.[7] It allows the players more melodic flexibility within the constraints of their fixed-keyed instrument, so that if a C-sharp is desired, it can be played although it does not physically exist on the actual keyboard. This phenomenon raises theoretical questions about whether or not these particular xylophones are in fact pentatonic, but that is the subject of another paper.

Classification Types

With the advancement of ethnomusicological research over the past few decades, scholars have discovered several local systems of classifying musical instruments that are based on different principals than the Western system established by E. M. von Hornbostel and Curt Sachs. With the xylophone, and all other instruments of the world, the Hornbostel/Sachs system classifies musical instruments first by the principal resonating material, and then more specifically by the type of materials and action used to set the sound in motion (Myers 1992, 450–52).[8] Since the gourds are not the primary resonating material, they do not figure into this system of classification. However, since they are an essential part of the sound aesthetic of West African xylophones, they should be included in the classification analysis. In the class of membranophones (instruments where sound is excited by tightly stretched membranes), xylophone gourds are referred to as "adulterated tube kazoos" (Myers 1992, 455), because currents of air resulting from the impact of the mallet on the keys pass through them and the membranes and produce a loud, buzzing quality.

Local terms in West Africa for the xylophone are especially interesting because, by understanding how and why xylophones are defined the way they are by the people who make and use them, we can learn what features are most salient by their own standards. This ethnographic perspective of xylophone names provides a reflection of the way people order and make sense of their musical world. Furthermore, differences in orthography of the instrument reflect intra- and extra-streams of communication

and cultural contact between different groups of people.

Most names for xylophones are similar because Mande languages are mutually intelligible. The most common terms are *balafon* (also spelled *balaphone, balafone), bala, balangi,* and *mala-kelen. Balafon,* actually the French term for *bala fo,* which means in Bambara to "make the *bala* speak," has been reappropriated and integrated into contemporary Mande language use. Among the Voltaic peoples the xylophone is called *balafon* and *xylophone* depending on which colonial language is in use. It is called *gyil (jil), jengsi,* and *kogyil (kur jil)* in Birifor groups who occupy Volta River regions in northern Ghana and southwestern Burkina Faso; *cholu* and *balam* in Bobo and Bwamu groups in Burkina Faso; and *kpoye* and *dylegbaha* in Senufo groups in the northern Côte d'Ivoire and southern Mali.

Local Classification Systems

In most local classification systems, the number of keys, pitch areas (that is pitches that cluster around distinct registers such as bass or soprano), and the performance context and function are essential criteria for categorizing xylophone types. The Minyanka and Bambara xylophones, for example, differentiate between sixteen keys (*balanin)* and eighteen keys (*balaba).* In addition to the difference in keys, the *balanin* has a higher pitch center than the *balaba* and is used for social dance events associated with youths. The *balaba,* by contrast, is normally reserved for religious and ceremonial contexts and with an older, more mature age group. Also in Mali, but among the Malinke, sacred xylophones have seventeen keys.

Among the Senufo of Mali and Côte d'Ivoire, two types of xylophones are differentiated by the number of keys they carry and how they are played. The large xylophones (eighteen to twenty keys) are played on the ground, and the twelve-keyed xylophones are suspended from the player's shoulders. They are also categorized by usage: the *ncimuoyin* (big xylophone) is used during major social and religious gatherings and as accompaniment to singers who comment on important social facets of life. The *ncizaare* is played in strictly instrumental ensembles and those of youths (Sanogo 1997, 14–15).

In my own system of differentiation, I use the shape of the frame and the tonal organization (pentatonic or equiheptatonic) based on ethnographic data from musicians about their own and other xylophones and on my own compatibility tests of playing my own Bambara/Minyanka xylophones with those from Voltaic players in Ghana. Woma, when asked to comment on differences he heard between his Dagara xylophones and the Bambara/Minyanka ones I had from Mali said that they were "the same dialect" and that if he had to go play music in Mali without his xylophones, he would be able to do it using theirs without any problem. "Dialect," he said, is "the flow of music which comes out of speaking."

When playing my own xylophones from central Mali to recorded music from Burkina Faso, I am able to replicate the pieces without any trouble. The only difference is that they are about one-half step lower and transposition is necessary. On the other hand, it is virtually impossible to play pentatonic xylophones with heptatonic ones, and there have been no musical recordings from West African xylophonists who have attempted this endeavor. Heptatonic xylophones, the Malinke type, are often played with Western instruments and in popular, electronic music ensembles because the scale, if moderated slightly, works with the Western tempered scale. Pentatonic xylophones, however, have not yet been featured as functional parts of Western music or world music ensembles because their tuning is highly incompatible with tempered tuning.

A Different Sense of Aesthetics

Aside from the tonal organization of the heptatonic and pentatonic types, generally speaking, xylophone aesthetics throughout West Africa value thick, timbral textures, resonance, "buzzing" (as was seen in the analysis of gourds), and a certain degree of ambiguity. Precise and matching pitches, or what Westerners would call being "in tune," are much less important than other musical qualities. In Malinke xylophone cultures, where xylophones most often serve as accompaniment to singing praises, oral history, and sometimes social commentary, aesthetics of melo-rhythmic tension and ambiguity are foregrounded. Xylophonists achieve this aesthetic of tension and ambiguity by playing complex polyrhythms in both hands (thus tension and ambiguity in motion) and through the sound of wide and variable pitch margins (Harris 1992).

In Voltaic contexts, loudness, prolonged duration of constant sound, and inharmoniousness in both timbral and tonal features are essential aesthetic components in addition to melo-rhythmic tension and ambiguity. These aesthetic priorities enable musicians to motivate dancers in social dance events, to communicate with the natural and spiritual worlds in sacred events such as possessions and funerals, and to accompany singing with a matching sound aesthetic. Understanding xylophone music aesthetics can, in turn, inform us about important values in a society.

Aesthetics can be understood by the way artists and participants describe what is a "good" and "bad" performance, instrument, and sound. Aesthetic quality can be identified in field and commercial music recordings throughout the region, live performance events, and even by computer-generated analysis. Conversations with Woma and Diarra reveal that a good xylophone is a matter of degree. According to both specialists and nonspecialists, all *balaw* are good if they produce a sound that emphasizes loudness, resonance, and a noisy timbre. By noisy I mean a sound that features high degrees of inharmoniousness, buzzing, and strike tones. When I asked my mentors how they would like the sound of the xylophone without the buzzing sound, they both replied that without the buzz, it is not good. Diarra went even further in stating that without the buzzing sound, it is not the *bala* but rather a different type of xylophone altogether.

For Woma, a xylophone would not sound good for one of two reasons: (1) if the wood is "good" but not well tuned, or (2) if the wood is "bad" but well tuned. He said that if the relationship of the wood to the tuning, the song to the tuning, and the gourds to the tuning are good, then the xylophone is good. Again, the concept of relationships surfaces in terms of musical aesthetics.

Evaluations of good performers are also important criteria for xylophone music aesthetics. The celebrated Ghanaian ethnomusicologist J. H. Nketia states that intensity is a general prerequisite of good performers and an attribute of performance (Nketia 1988, 53–89). According to musician informants from Sineni and N'Tòssoni in Central Mali, the same holds true for xylophonists in Minyankala. The criteria by which one identifies a master xylophonist is an extensive knowledge of repertoire, ability to communicate with and inspire dancers, stamina, and a unique playing style. Stamina, or playing with power (*fanga*), translates in performance as the ability to lead the musicians and dancers for extended lengths of time—sometimes from nightfall till dawn—and producing consistent loudness, resonance, and a high degree of timbral noise. Diarra used to tell me that the best players are particularly pleased when they can keep people dancing all night by continuous playing. The most common

expression used by everyone in the community to describe a good player is "strong" (*fanga b' a la*). In fact, for his performances Diarra procured for himself and applied on his forearms a traditional "medicine" (whose name and location he refused to divulge), which he claimed gave him extra power to play for so long without fatigue.

Finally, individual expression is another important aesthetic in xylophone music. Diarra, Issah and other xylophonists from N'Tòssoni explained on several different occasions that master xylophonists build the best instruments and are recognized by and admired for their uniqueness. Since Diarra is regarded as the greatest master by most people in the greater region of northern Minyankala, his xylophones operate as the standing prototype. Thus, his students and their signature instruments, which Diarra builds and hand-carries to their respective home regions, represent the Diarra school, if you will. He used to say to me with great satisfaction that when xylophones are being played, if one of them is his, people will say with pleasure, "Ah, that is Duga's *bala*."

After spending several years in West Africa, I returned to Indiana University to find that the descriptions of aesthetics given to me by various artists and people in the field were further confirmed through analysis of the xylophone's sound behavior. Through computer-generated analyses of the effects certain parts of the xylophone have on the overall sound, we can see how these aesthetics are built. The *bala's* amplitude, for example, is affected by the gourds, as figures 2.5a,b show.

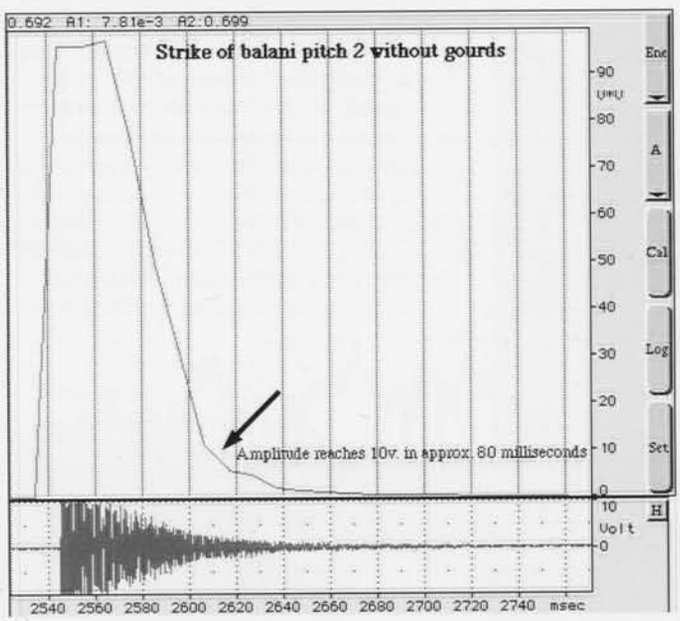
Noise and inharmoniousness are also important features in both xylophone types. One aspect of pitch in African pentatonic xylophones, which enhances inharmonic sounds, or "noise," is the strike tone. A strike tone is the initial higher-pitched sound produced by contact between the mallet and the key, which is separate from the resonating tone that results from vibrations from the key passing through its resonator. The strike tone produces distinctly different pitches than the primary tone. This became evident when using the Korg Pitch analyzer, which registered the pitch of both the mallet against the wood as well as that of the deeper sustained tone (figs. 2.6a,b).

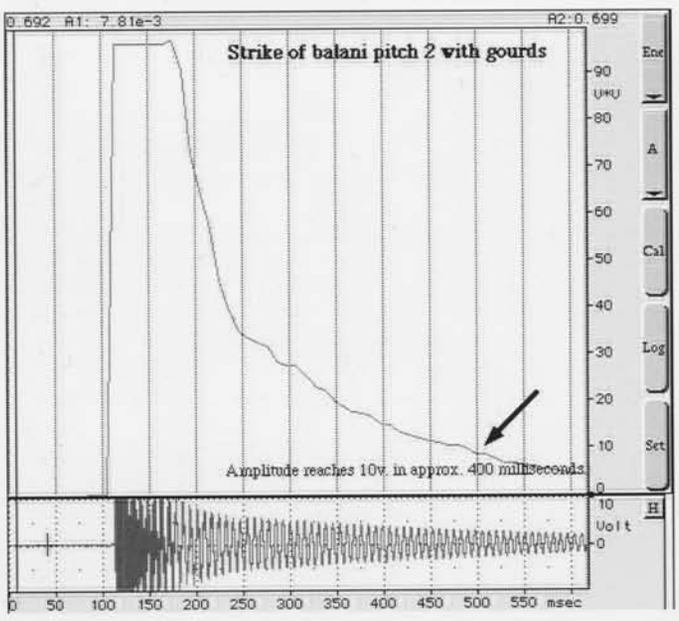
When the Xylophone Speaks

Players often say their xylophones speak. This can have two meanings: (1) myths of origin about the xylophone, and (2) messages given by the xylophone during music performance events. Both Voltaic and Mande myths concerning the origins of the xylophone revere the first xylophones for their spiritual birth and "speaking power." In this case, "speaking" is understood in the literal sense, but this power is generally believed to have been lost over the centuries. In performance, xylophones "speak" at marriages, funerals, and spirit possessions. According to some, they communicate with creatures of the natural world. In this sense, "speaking" means communicating to human and spiritual audiences through playing but not necessarily in literal terms. One finds a wide variety of performance events throughout West Africa, several of which are beautifully illustrated in ethnomusicology literature (Stone 1982). I have selected one example from central Mali.

The xylophone "speaks" in social events usually to dancers through musical interaction. In Minyankala, xylophone dance events are important because they maintain and fortify Minyanka social identity. People of the community are able to celebrate both their individuality and their collective identity. In short, it is one of the most important ways Minyanka people express their "sense of belonging." In secular dances, the xylophone speaks by encouraging and engaging its audiences in a plethora of participatory roles, such as dancing, playing instruments, improvising, observing, and courting.

The general physical placement of these events is characteristic of many West African dance events. From a bird's-eye view, the event occurs in a circular formation. Figures 2.7a,b show this formation with dancers, xylophone players, and other musicians in Kakraba Lobi's dance ensemble in Ghana. Xylophone music is generally accompanied by songs patterned on call and response where the leader (*balafokela*) calls the songs and is answered by the response of the other musicians. These songs, often self-composed or re-created, include repertoire from other regions in West Africa and even from other regions of the world. The participants in these events, outside of the musicians, vary depending on a number of factors, such as particular occasion, size, and composition of village members. Social dance events for youths (*soirées*) are organized by occupational and social associations (*tons*) composed of various gender, age, and special interest groups. *Soirées* resemble a middle American high school dance but without chaperones.





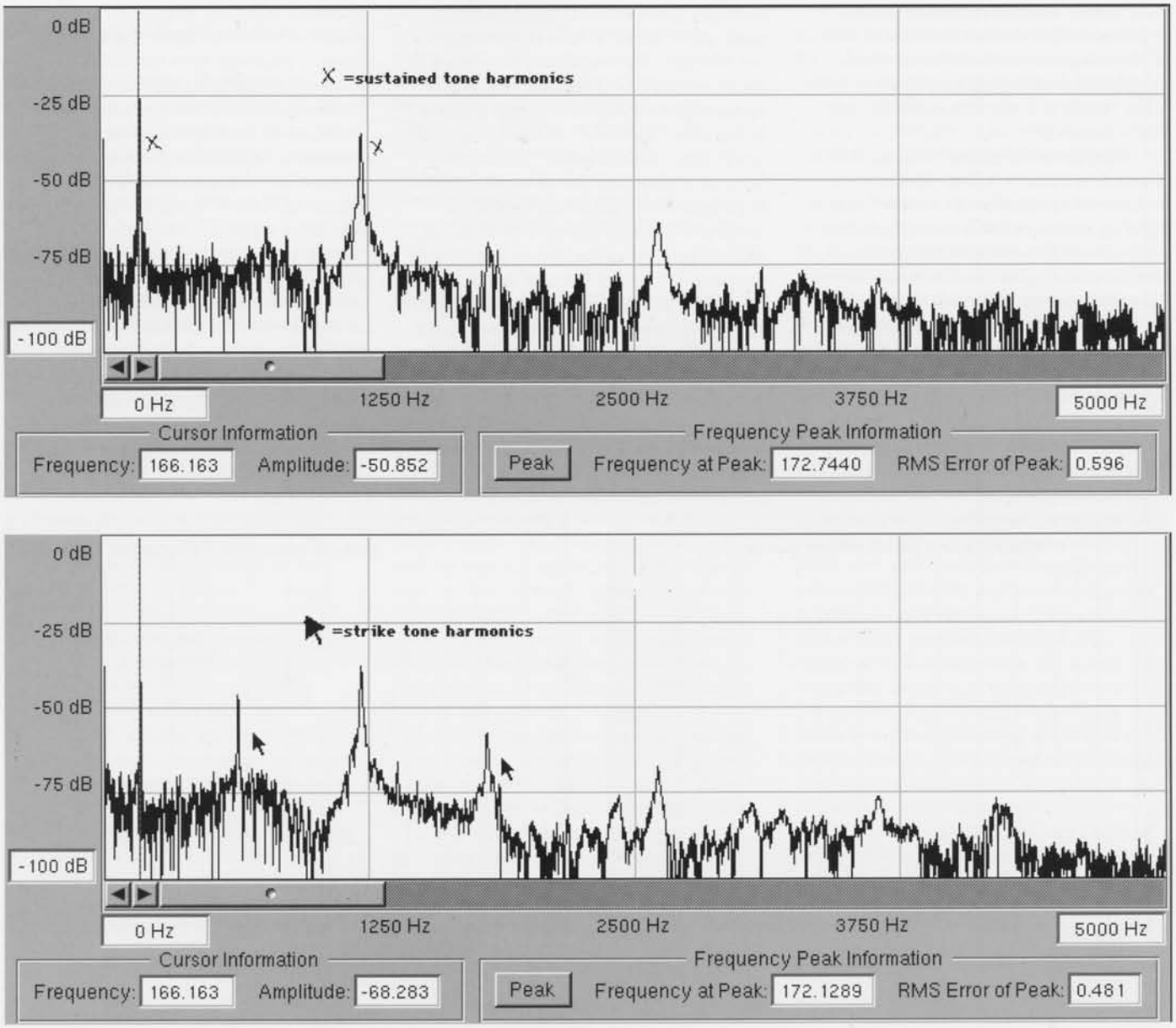
2.5a,b Rise and Decay of *bala* tones. These graphs compare the amplitude of a tone produced without and with a gourd. The amplitude in the tone without the gourd (fig. 2.5a) drops dramatically and rapidly. In figure 2.5b the amplitude of the same tone with the gourd drops and then maintains its amplitude level for a few milliseconds before dropping off like the other.

Xylophonists are responsible for keeping people dancing and in a state of experiential intensity until they themselves get tired. They are expected to provide high-intensity music throughout the night to play loud, hard, and fast almost constantly. Since buzzing and rattling devices serve as intensifiers, *balafokelaw* also wear wrist bracelets to which are attached pieces of metal that vibrate when they play. They also use medicines to improve strength and stamina.

Xylophones speak to the dancers by engaging indirect "conversation" between the *balafokela* and each dancer who comes to dance in front of him. The musician is expected to follow the dancers completely, as long as the dancers respect the basic steps and rhythmic structures that the xylophonist provides. An excerpt from Yaya Diallo's narrative accounts of situational events helps illustrate this point:

> When a person comes to the center of the circle to dance, the musicians must follow the dancer. The dancer can take as long as necessary to feel satisfied. The whole night is available for dancing. The musicians alternately relate the tempo of their playing to the circle and to the individuals who come to the center. A person who weighs 300 pounds cannot be expected to dance at the same speed as one who weighs 100 pounds. A grandfather of sixty-five years will move differently from a youth of eighteen. The Minianka feel that a music of standardized speed does not take human differences into account and thereby fails to show adequate respect for the individual. If a trembling elder enters the circle to do a dance he knows, the musicians honor him by following him (Diallo 1989, 114).

I found this same type of communication and respect in Sineni, Mali, with Diarra. In addition, part of the delight of these events is the individual character of the dancers which, when demonstrated, is highly applauded. During one event in Sineni, a group of boys had just finished up their personality dances when, after a moment's pause, one of the very old men who was back in the shadows of the crowd slowly entered the circle. Approaching the center in a stylistic rhythmic walk, he prompted squeals of excitement and



2.6a,b Analysis of amplitudes of sustained and strike tones on Bambara/Minyanka xylophone keys.

encouragement from the crowd, and the women let out high-pitched ululations that, characteristic of many African and Middle Eastern societies, are a sound that only women make to express intense emotion such as joy, warning, or excitement.

As we can see, "speaking" the xylophone in both esoteric and secular dance performance contexts requires a complex and delicate symbiosis between xylophonists and dancers, individual personality and community solidarity. The xylophonist's critical role in the success of these events, and the multiple skills (builder, player, singer, and communicator) he masters, demonstrate his profound understanding and integration in contemporary society. The fact of being well integrated in society, however, does not mean that master xylophonists are not also international, "world-class" artists.

Woma is one of many such cases. He is the principal xylophonist for the Ghana National Dance Ensemble (GNDE) and also performs professionally as a solo artist. He travels extensively, performing both independently and with the GNDE each year. In 1995, for example, he went to Japan, Indonesia, America, and twice to Germany with the GNDE alone. When he returned home after the visit to the United States, he was scheduled to spend only two days in Ghana before touring in Denmark. During an American tour in 1986 he came through Bloomington, Indiana. I was able to talk with him several times about how his xylophone "speaks" in this international setting.

Woma "speaks" his xylophones by communicating the "logic" in the music, by communicating with international audiences the common feelings that all people share. He believes that his playing brings people from all ends of the globe together. Though he is a "traditional" xylophone player from northern Ghana, Woma is an international artist who plays and composes xylophone music according to principles based on creative processes more than anything else. He wants his international audiences to appreciate the beauty of xylophone music and the expressive emotions that it invokes (personal communication, 1997).

Conclusion

To conclude this article, I want to emphasize once more the importance of cultural particularity and specificity and the significance of these aspects as viewed by the people in each xylophone music community. Such a perspective is enriching for those interested in musical cultures, as long as the analysis does not exoticize and marginalize the people under study. My personal conviction is that every culture participates, in one way or another, in the universal culture of humanity. The existence of people like Bernard Woma and other xylophonists proves that successful integation in one's own society does not exclude the ability to share that society's principal values with other civilizations. In conclusion, I leave the readers to reflect on this axiom of the celebrated writer Aimé Césaire: "There are two ways someone can lose him or herself: by segregation walled up in particularity, or by dilution in 'universality'" (1956).

2.7a,b Rehearsal of Kakraba Lobi's Dance Ensemble. Photographs by Heather A. Maxwell, Accra, Ghana 1987.

TURN UP THE VOLUME!

A Celebration of African Music

Jacqueline Cogdell DjeDje
Editor

With contributions by

Ernest D. Brown Jr.
Kimasi L. Browne
Leigh Creighton
Akin Euba
Clarence Bernard Henry
Christian Dowu Jayeola Horton
Cheryl L. Keyes
Jean Ngoya Kidula
Cynthia Tse Kimberlin
Gerhard Kubik
Heather A. Maxwell
Eddie S. Meadows
Lester P. Monts
Kazadi wa Mukuna
Ali Jihad Racy
Victoria Simmons

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Los Angeles

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Patrick Fitzgerald, Designer
Don Cole, Principal Photographer
Daniel R. Brauer, Production Manager

UCLA Fowler Museum of Cultural History
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