みんぱくリポジトリ
国立民族学博物館学術情報リポジトリ National Museum of Ethnolo

The Cultural Context

メタデータ	言語: English 出版者: 公開日: 2009-04-28 キーワード (Ja): キーワード (En): 作成者: ロバート, ガルフィアス メールアドレス: 所属:
URL	https://doi.org/10.15021/00001773

The Cultural Context

If culture is the sum of the things we do and we know and what we pass on for adoption and modification then it naturally follows that music is a part of all this. It grows out of culture, based on whatever tradition has been inherited along with all the modifications that have taken place. Nothing really new here, except that this means innovations, brilliant new ideas of any particular age must also be seen as a part and outgrowth of the same culture. The resistance to an old established idea and the creation of something consciously different from the past is in itself recognition of that past.

We can understand that music must grow out of its own cultural context. People in each culture create music from what they have learned and from what they have heard. Even when they create something entirely new, it is still based on what existed in previous experience. Music adds to the culture and is an important form and avenue for personal and group expression in it. It is also very much a product of that culture and of all the influences, historical, political, economic as well as aesthetic which have played upon it.

At the same time music has a place, a role, a function, in each culture. That is to say that in addition to being an outgrowth of the culture as well as a reflection of it, music has a status and function in each culture. There is a way that people use it, practice it, continue it and think about it which is unique to each culture. If in some society music begins as the formalizing of sounds used during the corralling and hunting of game and it continues to be performed in a symbolic or religious association with hunting, this is one kind of cultural context for music. If in another society every individual in the community is expected to perform in some way, by singing or dancing whenever the group holds a musical event, then this is another context. In another society, the religious leaders may tell the community that music is not good for them and even so the people go to places where music can be enjoyed and devote themselves deeply and passionately to it. In other societies, most of the people may not engage in the performance of music themselves and will instead pay others to serve this function for them. All of these examples are from cultures that exist today. The differences between them are differences in the cultures and are differences which have, in turn, had an effect on the music itself.

Before going any further it is important to note that in creating labels and categories for what we observe we are merely making use of helpful labels and descriptions to help us as we wade through the depths of myriad of different cultures

doing things their own way. The creation and application of these labels and categories does not in the slightest take away the importance of the concept as it is viewed in the particular cultural context in which is it found. If the musicians of Java and Bali had no traditional word for music and yet seemed to be making it all the time, they in that cultural context had no particular need for the generalized term. However as well look across many different cultures, we do.

Music and Ritual and Religion

In some societies music serves as an important accompaniment to ritual and may have little other function. In such cultures, music is performed only when certain ceremonies are performed. In our own culture we have few rituals anymore. There are a few, however. There are still times when it is expected that we will all sing the national anthem. In the United States, at official government functions, whenever the president appears, the old Revolutionary War march, "Hail to the Chief" is still played. In Great Britain "God Save the Queen", is played at the end of every theatrical performance, even for the showing of motion pictures. The military still use, in addition to marches, specific bugle calls which are both symbolic and at the same time clear messages to the troops. On ships the boatswain's whistle is used to make similar announcements and commands to all on board. We do not often think of these ritualized and symbolic ways that music is still used in our society because, in truth, this kind of ritual and symbolism is not really characteristic of modern Western and Westernized cultures anymore.

Music is often associated with ceremony and ritual. In the ancient courts of Asia, music was part of the emblem of the king, emperor or sultan. Certain music when played announced the presence of the ruler and some musics when played indicated that even when the ruler was not present, the performance had royal authority. Music is often used in religious ceremonies. In Japan one of the important annual religious festivals is the *kagura*, which means "music of the gods". In this ceremony, the performance of the music itself is the ceremony, the songs and dances being intended as entertainment for the gods. In Islam music cannot be associated with religion in any way. Even the reciting of the sacred Koran, which we would regard as singing, is never referred to as singing but as a special form of recitation because music of any kind is strictly forbidden in connection with any religious observation.

The tradition of religious music in the West until the Middle Ages was essentially the intoning of the sacred scriptures. It is likely that rather than actually singing the scriptures as we think of singing today, the text may have been intoned, that is recited as though speaking in tone. Many examples of this use of the human voice made divine by the addition of tone and yet not actually singing exist in many

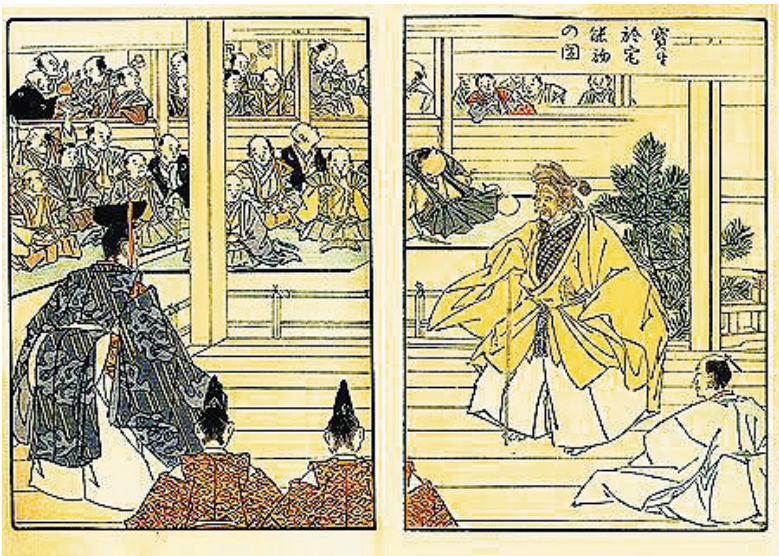

Fig.1 An old woodblock print of a Japanese Noh performance. Some members of the audience are listening, one seems to be asleep and another yawing, while a group in the back is busy conversing. (Sarugakuzushiki, 1907)

Fig.2

Woodblock prints were used as announcements of performances by famous Kabuki actors of 19th Century Japan. Even the style of the woodblock prints, their colors and design, reflect the flamboyant and exaggerated movement and speech style of the Kabuki theater. Music, dance and design are all integrated to reflect the style of Kabuki and to set it apart from the more refined and older Noh theater style (From 'Kabukinotate' edited by Masakatu Gunji and Yaenosuke Bando. Tokyo: Kodansha. 1984. pg. 113).

Fig.3 The *Kangen* ensemble of the Japanese Imperial Household. Even the formal spacing of the musicians seated on the floor reflects the Japanese concern for space and order.

Fig.4 The ancient ensemble of instruments used of the Confucian Ritual, or the Ceremony of the Sun and the Moon, includes a formal arrangement of instruments made of the eight important elements of ancient Chinese culture, played in a precise and very formal and exact musical pattern. The photo is of the Confucian ensemble as it survives today in Korea.

cultures. These are usually situations in which the sacred or magic character of the text is most important and it suggests that early Christian and Jewish liturgy may have been performed in such a manner.

Gradually increasingly complex settings of the scriptures were introduced that were intended to serve as expressions of supplication and of thanks but also inspire the congregation towards deeper religious feelings and to make them feel uplifted. Gradually, the cultural context of religious music in many of the churches of the Western world changed from being music to enhance worship and inspire religious fervor or respect came to be music which was intended to please the congregation and to encourage them to feel welcome and to return. Thus in our own ritual music we have changed from using music to enhance the power of the sacred texts, to using music as a means of enticing people to come to church.

Music in connection with religious ceremonies, as with any of use of music in the culture, can tell us much about how music is regarded and how it functions in that culture. In Zimbabwe among the Shona people, music is used to create an atmosphere which induces the individual to become one with the spirit and thus it serves as a connection to the spirit. But with Shona music, this is not just a created mood that is conducive to the mystic experience. The deep structure of the music has intricate repeated pattern that the listener can hear in many way and in the process creates his or her own perceived mental patterns out of the music by played. Entering deeply into this pattern-seeking while listening does indeed enhance the Shona's ability to attain the desired mystic experience.

The use of music in the high culture of the traditional world, both East and West shows both the use of complex forms of music expression for the sake of enhanced religious experience as well as offering the opportunity of proclaiming the wealth and status of the institution or even it's patron. In Western Europe for hundreds of years, the most skilled composers were employed to compose music for the ritual. This was also true in the Ottoman Empire where many of the great composers of the classical music of Turkey were also composers for the sacred dervish ceremonies, the Mevlevi *ayin*. Many of the most highly acclaimed compositions in this genre were composed for the ceremonies by Sufi mystics, but many were also composed by lay musicians and many even by famous sultans themselves. So music is used in connection with religion as an offering and entertainment to the gods, as in the Ancient Japanese *Kagura*, as an inducement to union with the spirit as with the Shone of Zimbabwe and as an expression of devotion and inspiration to the devotees as in the West and in Ottoman Turkey.

Music as Music

Music is the most complete, complex and fully articulated means by which

humans communicate with their fellows. It expresses the inner states of one individual to another, or that of a group to another group. While it is being performed, performer and listener share in this expression of feelings. We usually attempt to define what we call music in terms of the way it is manifested in our own particular culture. Much of what we to say about music is based on our own knowledge and familiarity with the music of the Western tradition. It is reasonable to be influenced strongly by what we know. However, we need to be mindful that we do not assume universal value systems for music where they do not exist.

When you think about it, we are virtually always in communication with each other. Even when we drop out, most of us need to stay in touch with the sounds of other humans, in some way, by radio, TV or listening to music. Music is one manifestation of the human's incessant need to communicate with his fellows. Much of his energy is spent in chattering, gesticulating and signaling to other humans, a process with which he has been passionately preoccupied since his first appearance on this planet. We find great comfort in this almost ceaseless and noisy communication with our fellows. Most of us are unwilling to ever stray very far away from it. Once in a while we may hear ourselves declare that we have a deep need to get away "from it all". Yet many usually find some means of taking it with us or seeking out more of it where ever we choose to go.

Music is one of those links with our fellow beings which most of us prefer not to be without. As a system of communication we know it works although we cannot yet be certain of just what it communicates to us. Given the natural tendency for humans to want to keep in contact with each other, of all the forms of contact available to us, there are many who, when given a choice, would prefer to hear another's human's music.

Early humans may have at first made music as a re-creation of the activities of a hunt, or as appeasement to the powerful spirits, or as way of healing for the sick. But at some point humans began to enjoy the sound of music for its own sake. In doing this and in performing music for the pleasure it gave and for the expression of feelings which it allowed, they had redefined music and its role in their culture. It is a different way of thinking about music, an almost self conscious way if we compare it to what must have been its early ritual and mystic origins. Now we can have humans entering a situation in which one might say, 'let's have a little music". Much of, in fact, probably most of what we think of as music fits into this category. But this as little more than a broad functional category for what falls within it encompasses most of the recorded human activity we know of music.

While it is certainly of a later date that what we have been talking about at this point, there is at least a reliable source describing the practice of using music as part of the hunt by the indigenous peoples of the Andes written by one of the early Spanish explorers, a botanist, Hipolito Ruiz. He describes the building of a fence in

the hills and then beating drums, snapping whips and blowing whistles until they have herded all the animals in the enclosure.[1)]

The conscious creation of a category of music as music is also defined culturally. There is of course, nothing inherent in the sound itself to elucidate such a category. It is the function, context and shared cultured that say, this is music to be listened to This, on the other hand, is music that goes with something else. This distinction is useful because it enables the acceptance of, just to take the example of religious music, the fact that Christians have and refer to music in their religion whereas Muslims do not use the word music in any form to describe the recitation of sacred texts. Yet this same recitation of the Koran were it to be described in any way, would have to be labeled religious and then if not music, some circumlocution to avoid the word, but it would clearly fall into the functional category into which we have placed the Shona spirit music, the Japanese Kagura, the Turkish Ayin and the church music of the West.

Think about the status of music in modern Westernized cultures. Although many popular musicians make substantial incomes, many parents would prefer their children to seek other channels of livelihood. Music is often relegated to a secondary role in our society. It is thought of as something which enriches or entertains us but is regarded by many as a frill, something extra, nice, but not necessary. Yet music is all pervasive. In every society known to us and in every period in history it has been there. Its very persistence and ever present existence suggests that it is more than an enrichment and a refinement to our lives. It, like language is a vital element of our very humanness. If humans everywhere appear unable to get along without music, then music is doing something much more than providing entertainment and even meaningful enrichment to this life. So in each society it takes an important role, even if one must look at the economics of it instead of what culture would have us believe about it.

But there is something else about the way music functions in our culture that is noteworthy. The British psychologist of music, John A. Sloboda has noted:

> Through a long social and historical process contemporary Western art culture has become characterized by functional specialism. In the case of music, as with most other art forms, a gulf has emerged between producer and consumer. Adult producers are typically large in number, usually untrained, and often unskilled in most forms of musical production. With the advent of sound recording it has become possible for the various functions to be completely separated in time and space. Consider, for instance, a Beethoven symphony. A group of performers construct their interpretation in necessary isolation from the composer, and also from the audience for whom the performance is intended (for example, in a recording studio). A member of the audience may then ‘receive’ the interpretation in social isolation from both composer and performer as a disembodied aural experience. This is particularly true of the domestic listener who

> may, through use of headphones and darkened room create the impression of being totally and exclusively enfolded by sound. Even at the concert there are usually strong social and geographical factors which separate listeners from performers. Performers and listeners go in and out by separate doors; they do not interact with one another. Any form of audience interruption is usually violently resisted. Such constraints tend to reinforce an 'illusion' which projects the sound of the music away from the realities of its origins in human work, both physical and mental. As in the puppet theatre, the modes of production become veiled in mystery, and we may have no particular wish to venture behind the proscenium arch.[2)]

Art Music, Specialized, Complex and Challenging

The words and thoughts which we use to describe the concept and ideal of music as "art" are strong in Western and Westernized society. We enjoy music but we remain removed from it. We hear much talk about just how important we believe the art of music to be. Although we generally agree that it is important, in our own culture we tend to think of music as an enrichment - something which makes our lives fuller but something we could manage without if we had to. We enjoy music, but only a few of us actually make it ourselves. This is often the way the subject of music goes whenever there is talk about the need to improve the quality and amount of teaching of music in our society or about the potential expense of better and more fully integrating it into our basic education system. It becomes something desirable but not necessary.

The manner in which music and, in fact, all the arts, are treated in modern society gives little indication of the more important role which it actually plays. In trying to look at some of the ways in which music is considered by humans, we must look beyond our own cultural definitions, beyond our own preconceptions and assumptions.

Even in societies in which there is no conscious verbalization supporting the notion that music is art, it may still be very important. There are cultures, for example, which have no word for music, or in which there is a word, but it is used to refer to only some forms and types in the culture but not to others, but for which we, even as outsiders, would have no difficulty calling music. The lack of verbalized system of terms for music, and its aesthetics does not preclude a recognition of its importance to the group. The stratification of values, whether is it articulated or not, forms a pattern which is unique in each society and never precisely reflected in the same way in any two. Although each may describe it differently it is impossible to find a society anywhere in which music does not play a role which is substantively parallel in importance to the manner in which we describe music as art.

In addition to being a system of communication in and of itself, music in most societies functions as an effective means of defining and delimiting the group and of

helping it to maintain a sense of cohesiveness. We may find that in some societies music is treated with the same sense of awe which is usually reserved for powerful and incomprehensible displays of magic. We do not usually think of ourselves as a society which places great trust in the power of magic. Magicians and sorcerers might not seem an appropriate parallel, yet, when we try to fathom the reasons by which the income of any of the top fifty current US Rock groups goes well up into the highest 5% income bracket of the country, it does seem that if not the awe of something like magic, something akin to it seems to be at work. Our notions of what we imagine to be primitive man's superstitious awe of his art may not, in fact, be so different from our own. The high ticket prices paid for performances and substantial income from the sale of recordings of the most popular artists around the world is a true indication of the role music actually plays for in modern society, in spite of what we may think. The amount of money used in support of popular music groups is parallel in level to the support which many in Western society give to religious organizations.

The Status of Musicians

In many societies, including those of the West and those that are Westernized, those who provide music are regarded as special people. Sometimes by certain segments of the society, they may be regarded with disdain and yet by others, they may be respected, sometimes even held in awe. Regardless many are often well-paid. In Westernized cultures, as in some others as well, musicians are paid by us to sound off and express feelings and thoughts which we believe are like ours. We pay them because we like the way they express how we feel. In such a society they are often outrageous, mad visionaries who help us articulate our subtlest feelings and dreams. Our songs may be the most effective means we have of defining ourselves as a group, of refining our emotions and perhaps of helping us to clarify even our thoughts. Certainly music articulates shades of mood and feeling which are impossible for us to describe in words and even the words to the songs have greater meaning for us because of the music in which they are engulfed.

In Western culture, many young children are given the opportunity to study music. Only a few continue to pursue this are a career or even as an avocation. Instead like many other stratified societies most of the population prefers to pay professionals to provide their music instead of playing it themselves. Thus the purchase of tickets for concerts or the purchase of CDs of music satisfies our need for music without having to learn to play it ourselves. Increasingly in many parts of the world the separation into music consumer and music producer is becoming more common. It may be a factor in increasingly diversified societies to rely on specialists even for music. In Europe during the last three hundred years a well educated person

was expected to perform music himself. Music perform at home among even middle class families was something which continued for many years in Europe and even in America until recently this was not an uncommon practice. Nevertheless, even among the nobles of Europe, many of whom were very adept musicians, they also had a great appreciation for the talent of others and employed the best musicians they could obtain in order to enjoy their performance, sometimes to play together with them and even to learn from them.

For about perhaps three or perhaps four hundred years in Eastern Europe a similar practice existed. Throughout much of Eastern Europe, Roma, or Gypsies had been entering and traveling about. Their reception was mixed at best. In some places they were welcome at other times and in other places the were feared and despised, in part because many thought they were connected to the Turks who were invading Europe at the time. Many times they were singled out merely because they were darker than the Europeans and had black eyes and black hair. The one area in which the Roma were allowed to establish themselves was as musicians. The Eastern Europeans quickly noted that the Roma were excellent musicians, learning the local music and performing to the pleasure and satisfaction of all very quickly. This is a case in which an exogamous group entered the society and one branch of it became valued because they fulfilled a function that was valued and important.

In some cultures, professional musicians, that is those who make a living from it, are less highly regarded than amateurs. This is the case in traditional Iran, Turkey and Okinawa. In these cultures special individuals who have devoted their time to the pursuit of classical music are regarded as the greatest interpreters and carriers of the music traditions. These musicians are people who have other means of employment; generally they are well educated people who have the leisure time to study music for many years. Many in reality spend little time at anything else but the sense that they do not play for sustenance is clearly part of the picture. But what is important is that it is these amateur musicians who know more about the old traditions in these countries then do the paid professional musicians and it is they who have preserved it in its present form.

In some cultures musicians are those who were born into special families of musicians and outsiders are not permitted to join their ranks. The musicians of the Imperial Household Music Department of Japan can trace their lineage back to the musicians who were in service to the court back to the 9th Century and sometimes even earlier. Until the 1950s no one who was not already a member of one of these guild families would be allowed to join the ranks of the palace musicians, although today this has changed. Even today all the court musicians are men. It has been documented from time to time when the family had no male heir, one of the daughters could be married to perhaps the third son of another family and this young man would then take the family name of the hereditary guild family and the tradition

could thus go on.

There are cultures in Africa in which it is believed that only those from families of musicians can ever master music. There is no formal restriction preventing others from learning the music. They simply believe that not being born into one of the families of musicians makes it impossible for them to learn the music.

In most traditional cultures of the world, music was exclusively a profession for men. Often reflecting a system of segregation which was in place in other areas of the society, in some cases, there could be women musicians but then, as in the case of the women's orchestras of ancient China, the orchestra would be made up of women alone and men would not be permitted to join them. Since the segregation into men's and women's quarters was the practice in much of the ancient old world, the segregation of female musicians from male musicians was an outgrowth of the general practice. Women wanted to have music in their own quarters just as the men did and pressure to allow that gave way to the establishment of women's ensembles and orchestras.

In 16 and 17th century Europe, women were encouraged to take up the study of music because it was thought to add refinement to young women. Men did also take up music and it was not uncommon to have them do so and to do so was considered a refinement. In the case of women, however, it was thought to make a young woman of good family more desirable for marriage since the study of music showed a refinement, something which did not hold true in the same manner for men.

In England, France and in Spain on until even the early 20th century the study of music among women was encouraged by polite society. In the Northern Philippines where the playing of the old Spanish harp continues even today, many women in their youth were encouraged to learn to sing and play the harp, although most did not play again very often after marriage. In Japan the study of the thirteen string *koto* and the three string *shamisen* in a repertoire in which they were both used, were thought appropriate for women whereas other forms of music, even other kinds of *shamisen* music, were often not considered appropriate. It is curious that in this same genre, only blind men could play, whereas in other forms of Japanese music, only men were allowed to learn and to perform. Many of these ideas have slowly and steadily changed, particularly under the purview of changes in government policy. In China, Korea and Japan, many forms of music in which formerly only men were allowed to perform, now have women musicians in their ranks.

One of the areas in which the strictures against women performing music were not always strictly enforced was in singing. Throughout history and in many cultures women were noted as singers in situations in which otherwise music was not considered seemly for them. Nonetheless, in many traditional societies the same restrictions still apply. In some countries of the Muslim Middle East, for example,

even recordings of male and female voices together cannot be played on the radio.

Music as Cultural Delineator

The music we listen to identifies us and explains something about us to others. When you meet someone as you get to know them, the kind of music they listen to may tell you something about them. At times it is through meeting others and learning about the kind of music that they like that we learn about new kinds of music and expand our own collection of favorites. In our fluid and open society, we define our subcultures most clearly with music. Although in more cohesive and less highly stratified societies the same diversity of tastes may not occur, in most industrialized societies there are many options and choices available in the kind of music one can listen to and in this way these subcultures can develop. Although the music may be sometimes different, this same diversity of options occurs for example, in Japan and in most of the countries of Europe and in some countries in Latin America.

Music plays an important role in each of our daily lives. We are accustomed to thinking of music and the arts in general, as valuable to us because of the refinement and depth which they add to our lives. Yet, music has much to do with our balance and sense of well being affecting and enhancing even the pattern and nuances of meaning in our speech and thoughts.

To the best of our knowledge there has never been a society in which music did not play a vital and integral role. Claude Levi-Strauss in the Raw and The Cooked after describing music as a metaphor for myth and then drawing several parallels between them says 'music has its being in me, and I listen to myself through it'[3]. The use and function of music in all societies known to us suggests that such a contention or something parallel to may exist for all of us. But such a statement logically draws us to consider some of the distinct roles of music and speech.

Music and Language

The parallels between music and language are significant. Both require sound and music, in its most simple form is the utterance of sound from the human voice. If we note that in the earliest leaning of language, the infant learns words through association and repetition. Invariably an emotional tone of emphasis or approbation is enunciated along with the word so that the infant is learning an associated emotional tone along with the word. It appears to me that the infant is first learning an emotional vocabulary and then associating it with words, or may even be leaning to focus and express an already nascent emotional vocabulary through association with sound.

At what point did humans begin to use sound as a means of communication? It will never be possible, most likely, to know this. The evidence is intangible and lost. If is safe to guess that an emotional outburst with sound came before words and that from there the path from sound to signal must have followed. But here again we are faced with the question of pinpointing the line between a sound of surprise or sudden emotion and the production of sound for the purpose of expressing inner states of being. My bet is that what I will music, as a means of codifying emotions, came before the forming of what we think of as words.

Whether this is true or not, music and speech have moved together. The tone and accent pattern of speech have had a guiding influence on the creation of music. This is as evident in what we know of the past as it is in the present. To give just a few examples, the instrumental compositions of Hungarian composers such as Bartok and Kodaly show the same unmistakable accent patterns as found in Hungarian folk music and both are strongly related to patterns in spoken language. In contemporary pop music, the influence of both British English and American vernacular speech have had a strong and defining influence on the patterns of the music. In Japan, where normal speech pattern is more unaccented and unstressed, perhaps parallel to French as opposed to English, the contemporary Japan pop music, sung in colloquial Japanese, deliberately distorts the stress and accent patterns of spoken Japanese to make is sound more like the American and British models it is imitating.

Music, like other aspects of culture including speech, is aided in its dissemination by contiguity. Thus it is easy to find patterns of cultural diffusion among neighboring cultures also showing patterns of musical adoption. This begins to change in 19th century with colonialism and travel across greater geographic and cultural differences. Then we see the sudden transplantation of radically different cultural elements under the support of political sway. For example this is the case with the introduction brass band music suddenly into 19th Century Japan.

The pattern of dissemination of music styles and practices often parallels spread of language and speech patterns, adopted words and structures. However, there are significant instances where music jumps across language barriers with ease. In the present day, the manner in which audiences and performers in the Far East, Japan, Korea and China have adapted European and American popular music styles scarcely impeded by the considerable distance of the spoken language. In addition Chinese, Japanese and Korean popular singers and musicians are also imitating each others imitations of the Western pop music and again unmindful of the considerable language differences.

In spite of the ease with which musical styles and practices can jump borders, a unique music idiom is often felt by those in the culture to represent and parallel their own sense of national or regional identity. This has often been used to subvert

political ambitions as well. At the moment China is working energetically to absorb the peoples of Mongolia. Including the territories of Mongolia under Chinese control is one thing, but they have begun control cultural dissemination to such a degree that much of the recent music of Mongolia is losing its Mongolian identity and is sounding more and more like the idealized Chinese models. Like the loss of languages, if this continues long enough there may soon be only few who remember and perform the old native Mongolian music.

Language and Music as Human Traits

The biologist Lewis Thomas has stated that speech and especially, music, are dominant aspects of human biology.[4)] Recent brain research also suggests the notion that the capacity for speech and music are among the unique specialized functions found only in the human brain. We are also learning more about how the brain reacts to sensual stimuli and that its responses are not single and direct, as is characteristic of even the most complex artificial intelligence computer system, but rather that for each stimulus there is a complex of multiple and simultaneous neural responses. Biologists also tell us that the health of any species is reflected in the degree of variant forms in which it appears. In addition to their importance as biological indicators, diversity of choice and variety appear to be closely linked to the best functioning of the human brain and in this way may also be important factors in observing culture. The combination of these ideas suggests that the study of changes in the patterns of accessibility and, in particular, the potential loss of diversity in music for large percentages of the world population should be a matter of serious concern. These changes will have possible far-reaching effects on the human condition.

Notes

1) The Journals of Hipolito Ruiz, Spanish Botanist in Peru and Chile 1777 - 1788. Translated by Richard Evans Schultes and Maria Jose Nemry von Thenen de Jaramillo-Arango. Portland: Timber Press, 1998. p.104
2) John Sloboda. Generative Processes in Music. The Psychology of Performance, Improvisation and Composition. Oxford: Clarendon, 1988. p v.
3) Claude Levi Strauss. The Raw and the Cooked. pg 17.
4) Thomas, Lewis, Lives of a Cell: Notes of a Biology Watcher (New York: Bantam. 1974), pg. 26