

A Short Prehistory of Western Music

(Provisional course material, W310 degree course)

Philip Tagg, Institute of Popular Music,
University of Liverpool, February-April 2002

Preliminaries

Background and aims

Readership

This document has been written for students taking the first-year module 'Origins of Popular Music' at the University of Liverpool.¹ The majority of students on that module are notationally literate, but a significant minority of them are not. Consequently, notation and musical-structural terminology is kept to a bare minimum. Nevertheless, although students can borrow a MiniDisc or CD compilation of relevant recordings, and although many music examples are played during lectures, some parts of this text do demand very elementary music-theoretical skills, such as: [1] the ability to decipher simple G-clef notation; [2] knowing where the twelve notes of the Western scale are situated on a (music) keyboard; [3] familiarity with such terms as interval, octave, fifth, fourth, third, tone, semitone, metre, accent, beat, pulse, tempo. Other essential terms, for example polyphony, heterophony and polyrhythm, are defined and explained in other course materials.² Students are also expected to be familiar with basic terminology covered in the module 'Introduction to Popular Music Studies'.³

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1. 'Module' is UK university officialese for what in most countries is called a 'course'. Students take eight modules (core and/or optional courses) for each of the three years it takes to complete the BA degree/programme. Most UK modules (= courses) are taught for between two and three hours per week during a twelve-week semester. The topics dealt with in this text complement what I try to cover during the first six weeks of the module (= course) 'Origins of Popular Music'. An overview of this module is posted online at www.tagg.org/teaching/origins/origins.html.
 2. See [1] www.tagg.org/teaching/epmowartics2000.pdf; [2] www.tagg.org/teaching/melodaccomp.pdf; [3] www.tagg.org/teaching/harmonyhandout.pdf.
 3. See www.tagg.org/teaching/ipms/ipms.html, posted online throughout the year except between October and December when Introduction to Popular Music students are researching the terms for their 'ics and ologies' assignment.

Aims and restrictions

Two main aims of the module 'Origins of Popular Music'⁴ are:

- to provide a pre-history of popular music;
- to identify and analyse differences and similarities between 'popular', 'art', and 'folk' musics.

The reason behind writing this text is to provide basic information and ideas relating to the two aims just mentioned. In so doing, it will also be necessary to provide:

- a working definition of the term 'music';
- an overview of the main functions of music;
- an overview of theories about music's origins;
- a historical overview of developments leading to the split between 'high' and 'low' in music;
- basic accounts of relationships between musical structure and function;
- working definitions of 'folk', 'art' and 'popular' music.

One general aim of this text is to show how both the actual sounds of music and notions about music tie closely in with other aspects of human life and behaviour — with religion, technology, ethical values, the production of goods and services, social structure, etc. The ability to identify such links in history should make it easier to understand the nature of musical change and development in more recent times. Such understanding should hopefully also make it easier to react constructively to future change in our musical culture.

This text is under ongoing construction. It is not an exhaustive or authoritative account of the origins of music in Western Europe, it does not cover all important music cultures and developments. It is intended to act as no more than a general outline.⁵

Main sources for Chapters 1 - 2

The information referred to in Chapter 1 is drawn from a wide variety of sources. Most influential in the discussion of evolutionist theory was Ian Cross's article 'Is music the most important thing we ever did? Music, development and evolution' (Cross 1999).

Much of Chapter 2 is translated and freely adapted from Jan Ling's music history teaching materials (Ling 1973) and several illustrations are taken from his Swedish-language history of music (Ling 1983).

The most frequently consulted sources of information for Chapter 3 are Ling's *Euro-pas musikhistoria -1730* (1983), Crossley-Holland's contributions to *The Pelican History of Music* (1959), Kinder & Hilgemann's *Atlas of World History* (1978) and *Groves Dictionary of Music and Musicians* (1995).

4. For all aims and more details about this module, see www.tagg.org/teaching/origins/origins.html.

5. For more detailed accounts of the various topics discussed in this text, see 'Sources' (above) and Bibliography.

Chapter 1

What is 'music' and why is it important?

'Music': a culturally specific concept

To discuss the origins of anything you obviously need to have some idea of what that 'anything' is. Now, although no society of which we have any knowledge has ever been without what we call music, the *concept* of music is by no means universal. Many cultures have no word equivalent to what we seem to mean by it. For example, the Tiv nation of West Africa (Keil 1977) and the Ewe of Togo and Eastern Ghana do not seem to have had much need to single out music as something needing a special word of its own any more than we Brits seem to be in need of three different words for the basic types of snow, each of which the Inuktitut language refines conceptually into several subcategories.⁶ To be fair, it should be said that the Ewe do actually use the English word 'music', but only as an untranslated loan word to denote foreign phenomena like singing hymns or the sounds issuing from a cassette player or the radio. The music (in our sense of the word) they make themselves in traditional village life has no equivalent in the Ewe language.

'Vù really means 'drum' and há is the word for club or association. A vù há is the club you belong to in the village. You could belong to a club with fast or slow drums, depending on your character and family. Voice is called bá, so singing is vù bá. Vù is used to signify the whole performance or occasion: the music, singing, drums, drama and so on.'⁷

Having no exact verbal equivalent to our 'music' clearly does not mean that the culture in question is without music in any more than the English language's lack of verbal equivalent to the Hindi notion of *rasa* or the German notion of *Weltanschauung* means that we cannot conceive of different types of feeling/mood/state-of-mind (*rasa*) or of different ways of looking at the world (*Weltanschauung*). Nor is a lack of equivalent to our word 'music' connected to village communities in West Africa because the Japanese, with their long-standing traditions of music and theatre in official religion and at feudal courts, did not feel obliged to invent a word equivalent to the European concept of 'music' until the nineteenth century. The Japanese translated 'music' as *ongaku* (音楽), *on* (音) meaning sound and *gaku* (楽) enjoyment, i.e. sounds performed for listening enjoyment or entertainment.⁸ It just seems that neither the Japanese nor the Ewe needed a word for what we mean by music until they met Europeans at the height of colonial expansion. It must have been strange to come across people who seemed to treat what we call music as if it

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6. Inuktitut is an Inuit language. For more on the issue of Inuit words for various types of snow, see <http://www.linguistlist.org/issues/5/5-1401.html> (2002-02-23), <http://www.industryweek.com/Columns/ASP/columns.asp?ColumnId=258> (2002-02-23).
 7. Conversation with Klevor Abo, Göteborg, 2 November 1983.
 8. Lecture by Prof. Toru Mitsui (Kanazawa University) at IPM, Liverpool, February 1993, cf. *nogaku* (music and movement in *No* theatre), *hogaku* (stylised indigenous music, song and dance), *gagaku* (courtly music and dance). The Welsh word for 'music', *cerddoraeth*, contains three morphemes: (i) *cerdd*, meaning song or poem; (ii) *-or*, being similar to the 'or' at the end of 'inventor' or 'councillor'; (iii) *-aeth*, roughly equivalent to the *-ship*, ending of 'musicianship'. *Cerddoraeth*, translated as 'music', therefore literally means the art of those who make songs or music. *Cerddor*, it should be noted, is Welsh for 'musician'.

could exist independently of a larger whole (drama, singing, dancing, ritual, etc.), and the Japanese went straight to the heart of the matter with the word *ongaku*, identifying the European notion of music as referring to the non-verbal sounding bits of what they themselves considered as part of a far larger set of phenomena and practices. The Ewe reacted similarly to our strange culture, using the English colonial word 'music' to label European music which was not an integral part of their own traditional culture and which we Europeans seemed to regard as separable from other cultural practices.⁹

From these two brief cross-cultural observations about the word, it should be clear that 'music' denotes a particular type of human sound production and that those sounds are associated with the human voice or with human movement. It is also clear that these sounds have functions involving particular aspects of communication in particular social and cultural situations. Adding our own experience of our own musical culture to the argument, we are now in a position to put forward a working definition of 'music' so that we can start discussing music's origins.

'Music': a working definition

It is necessary to start this section by positing a few axioms.

Eight axioms

1. Music does not exist unless it is heard by someone, whether out loud or inside someone's head. Sounds which no-one hears, even a recording of music out of human earshot, is only potentially, not really, music.
2. Although the original source of musical sound does not have to be human, music is always the result of some kind of human mediation, intention or organisation through production practices such as composition, arrangement, performance or presentation. In other words, to become music, one or more humans has/have to organise sounds (that may or may not be considered musical in themselves), into sequentially, and sometimes synchronically, ordered patterns. For example, the sound of a smoke alarm is unlikely to be regarded in itself as music, but sampled and repeated over a drum track, or combined with sounds of screams and conflagration edited in at certain points, it can become music.¹⁰
3. If points 1 and 2 are valid, then music is a matter of interhuman communication.
4. Like speech, music is mediated as sound but, unlike speech, music's sounds do not need to include words, even though one of the most common forms of musical expression around the world entails the singing, chanting or reciting of words. Another way of understanding the distinction is to remember that while the prosodic, or 'musical' aspects of speech — tonal, durational and metric elements such as inflexion, intonation, accentuation, intonation, rhythm, periodicity — are important to the communication of the spoken word, a wordless utterance consisting only of prosodic elements ceases by definition to be speech (it has no words) and is more likely to be understood as 'music'.¹¹

9. There is, of course, more to the history of meanings for the word 'music' in Europe. Some of those developments are mentioned later (see , p.).

10. Even John Cage's famous *4'33* can be qualified as music because its performed 'silence' is organised as a sound event in relation to other, contrasting sound events.

5. Although closely related to human gesture and movement — for example, dancing, marching, caressing, jumping — human gesture and movement can exist without music even if music cannot be produced without some sort of human gesture or movement.
6. If points 4 and 5 are valid, music 'is' no more gesture or movement than it 'is' speech, even though it is intimately associated with all three.
7. If music involves the human organisation and perception of non-verbal sound (points 1-6, above), and if it is closely associated with gesture and movement, it is close to preverbal modes of sensory perception and, consequently, to the mediation of somatic (corporeal) and affective (emotional) aspects of human cognition.¹²
8. Although music is a universal human phenomenon, and even though there may be a few general bio-acoustic universals of musical expression (see p.6), the same sounds or combinations of sounds are not necessarily intended, heard, understood or used in the same way in different musical cultures.

Short definition

On the basis of the eight points just presented, we can now posit a working definition of music for the rest of this text.

Music is that form of interhuman communication in which humanly organised, non-verbal sound is perceived as vehiculating primarily affective (emotional) and/or gestural (corporeal) patterns of cognition.

Music: other important basic traits

Before starting our discussion of music's origins, it is important to state three more tenets so that there is no doubt about what we mean by *music* in the rest of this text.

1. Concerted simultaneity and collective identity

Musical communication can take place between:

- an individual and himself/herself;
- two individuals;
- an individual and a group;
- a group and an individual;
- individuals within the same group;
- members of one group and those of another.

Particularly musical (and choreographic) states of communication are those involving a *concerted simultaneity* of sound events or movements, that is, between a group and its members, between a group and an individual or between two groups. While you can sing, play, dance, talk, paint, sculpt and write to or for yourself and for others, it is very rare for several people to simultaneously talk, write, paint or

11. Tonal languages, i.e. languages in which denotation is conveyed by means of pitch (as tonemes) as well as by consonants and vowels (phonemes), are discussed below (p.xx).

12. This aspect of music is dealt with in more detail under 'Music and socialisation' (p.13,ff.).

sculpt in time with each other. In fact, as soon as *speech is subordinated to temporal organisation of its prosodic elements* (rhythm, accentuation, relative pitch, etc.), it becomes intrinsically musical, as is evident from the choral character of rhythmically chanted slogans in street demonstrations or in the role of the choir in Ancient Greek drama. Thanks to this factor of concerted simultaneity, music and dance are particularly suited to expressing *collective messages of affective and corporeal identity* of individuals in relation to themselves, each other, and their social, as well as physical, surroundings.¹³

2. Intra- and extrageneric

Direct imitations of, or reference to, sound outside the framework of musical discourse are relatively uncommon elements in most European and North American music.¹⁴ In fact, musical structures often seem to be objectively related to either: [a] nothing outside themselves; or [b] their occurrence in similar guise in other music; or [c] their own context within the piece of music in which they (already) occur. At the same time, it would be silly to treat music as a self-contained system of sound combinations because changes in musical style are found in conjunction with (accompanying, preceding, following) change in the society and culture of which the music is part.

The contradiction between MUSIC ONLY REFERS TO MUSIC (the intrageneric notion) and MUSIC IS RELATED TO SOCIETY (extrageneric) is non-antagonistic. A recurrent symptom observed when studying how musics vary inside society and from one society to another in time or place is the way in which new means of musical expression are incorporated into the main body of any given musical tradition from outside the framework of its own discourse. These 'intonation crises' (Assafyev 1976: 100-101) work in a number of different ways. They can:

- 'refer' to other musical codes, by acting as social connotors of what sort of people use those 'other' sounds in which situations;¹⁵
- reflect changes in sound technology, acoustic conditions, or the soundscape and changes in collective self-perception accompanying these developments, for example, from clavichord to grand piano, from bagpipe to accordion, from rural to urban blues, from rock music to technopop.
- reflect changes in class structure or other notable demographic change, such as reggae influences on British rock, or the shift in dominance of US popular music (1930s - 1960s) from Broadway shows to the more rock, blues and country based styles from the US South and West.
- act as a combination of any of the three processes just mentioned.

3. Musical 'universals'

Cross-cultural 'universals' of musical code are bioacoustic. While such relation-

13. Even multitracking, overdubs, etc., although frequently performed by the same individual on different occasions, constitute an intrinsic collectivity of parts or voices.

14. See section about 'sonic anaphones' in *Introductory Notes to the Semiotics of Music*, www.tagg.org/teaching/analys/semiotug.pdf.

15. See section about 'genre synecdoches' in *Introductory Notes to the Semiotics of Music*, www.tagg.org/teaching/analys/semiotug.pdf.

ships between musical sound and the human body are at the basis of all music, the majority of musical communication is nevertheless culturally specific. The basic 'bioacoustic universals' of musical code can be summarised as the following relationships:

- between [a] musical tempo (pulse) and [b] heartbeat (pulse) or the speed of breathing, walking, running and other bodily movement. This means that no-one can musically sleep in a hurry, stand still while running, etc.¹⁶
- between [a] musical loudness and timbre (attack, envelope, decay, transients) and [b] certain types of physical activity. This means no-one can make gentle or 'caressing' kinds of musical statement by striking hard objects sharply, that it is counterproductive to yell jerky lullabies at break-neck speed and that no-one uses legato phrasing or soft, rounded timbres for hunting or war situations.¹⁷
- between [a] speed and loudness of tone beats and [b] the acoustic setting. This means that quick, quiet tone beats are indiscernible if there is a lot of reverberation and that slow, long, loud ones are difficult to produce and sustain acoustically if there is little or no reverberation. This is why a dance or pub rock band is well advised to take its acoustic space around with it in the form of echo effects to overcome all the carpets and clothes that would otherwise damp the sounds the band produces.
- between [a] musical phrase lengths and [b] the capacity of the human lung. This means that few people can sing or blow and breathe in at the same time. It also implies that musical phrases tend to last between two and ten seconds.¹⁸

The general areas of connotation just mentioned (acoustic situation, movement, speed, energy and non-musical sound) are all in a bioacoustic relationship to the musical parameters cited (pulse, volume, phrase duration and timbre). These relationships may well be cross-cultural, but that does not mean that emotional attitudes towards such phenomena as large spaces (cold and lonely versus free and

16. For relation between smaller bodily movements (fingers, eyes, etc.) and musical surface rate, see Tagg 1997. *Bra Böckers Lärlexikon, vol 5* (Höganäs 1982: 145-146) states that a well-trained athlete's pulse rate can, if measured during sleep, be as low as 40 b.p.m. And that the pulse of a baby in a state of stress exceeds 200 b.p.m. This coincides with the limits of a metronome, from 40 (*lento*) to 212 (*prestissimo*).

17. Musical volume must be considered as a culturally relative phenomenon, in that variations between societies in the loudness of the soundscape (Schafer 1977: 71 ff, 151 ff, 181 ff) will require 'loud' and 'soft' to adapt to what is audible above the noise of the soundscape (Tagg 1987: 145 ff). For more about links between vocal timbre and types of human activity, see Lomax (1968).

18. This practice is known as circular breathing. Of course, some musicians (e.g. jazz saxophonist Roland Kirk and every didgeridoo player) can inhale through the nose and blow out through a wind instrument. At the same time, there are all sorts of bellowed (e.g. bagpipes, organs), mechanical, electromechanical and electronic instruments that can make melodies without being hampered by the restrictions of the human lung. Some people even sing while breathing in. More importantly, neither percussion instruments (including mbiras, pianos, xylophones as well as drums) nor plucked / bowed instruments depend on inhalation / exhalation to measure phrases. Nevertheless, studies of rhythmic or melodic recurrence (reiterative, sequential, varied, etc.) in any music will almost certainly show that most rhythmic / melodic statements can be perceived as units (motifs or phrases) seldom occupying less than two or more than ten seconds. Even the didgeridoo player, who inhales while chanting into a hollow eucalyptus trunk, measures his constant flow of sound with rhythmic and timbric motifs that also fit in with phrase durations.

open), hunting (exhilarating versus cruel), hurrying (pleasant versus unpleasant) will also be the same even inside one and the same culture, let alone between cultures. One reason for such discrepancy is that the musical parameters mentioned in the list of 'universals' (pulse, volume, general phrase duration and certain aspects of timbre and pitch) *do not include* the way in which rhythmic, metric, timbral, tonal, melodic, instrumental or harmonic parameters are organised in relation to each other inside the musical discourse. Such *musical organisation* presupposes some sort of *social organisation* and cultural context before it can be created, understood or otherwise invested with meaning. In other words: only extremely general bioacoustic types of connotation can be considered as cross-cultural universals of music. Therefore, even if musical and linguistic cultural boundaries do not necessarily coincide, it is fallacious to regard music as a universal language.

Music's prehistory

Sources

There are four main sources of information about music's prehistory: (i) archaeological evidence in the form of musical instruments; (ii) archaeological evidence in the form of paintings or sculptures representing musical artefacts or activities; (iii) orally transmitted information preserved in stories, myths, etc. and later written down; (iv) present-day or recent oral cultures whose economy, technology and culture resemble those of societies in prehistorical periods; (v) recent studies of music from biological, neurological and social-anthropological perspectives.

Theories of music's origins

Fig. 1:1 60,000-year old cave bear femur bone segment with 4 holes (2 complete, 2 partial, one at each broken end). Produces 4 notes: do, re, mi, fa.

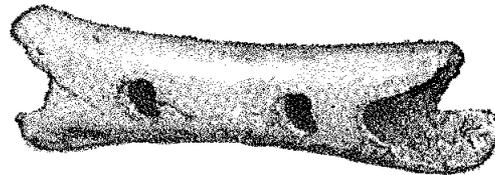
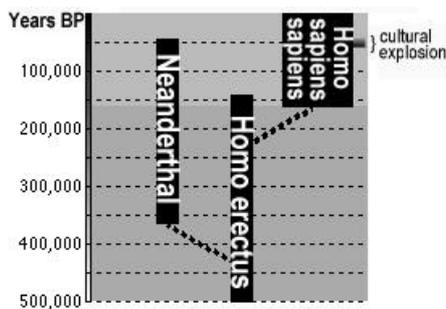


Fig. 1:2 Rough chronology of hominids



The oldest musical instrument archaeologists have found so far is a flute, made from the femur of the now extinct European bear (fig.1:1). Discovered in today's Slovenia in 1995, the bone flute has been dated to between 43,000 and 82,000 BP,¹⁹ i.e. around the time of the 'cultural explosion' in human development. Now, since flutes are technically more complicated than several types of musical instrument (e.g. sticks and rattles), and since bone is a more difficult material to

19. Huron (1999). BP = Before Present. The abbreviation BP will be used throughout this text for years previously referred to by western Europeans as BC (Before Christ). Year numbers not followed by 'BP' are automatically CE dates ('Common Era' rather than 'Anno Domini' = 'in the year of Our Lord'). 'CE' is only added to a date only if there might be confusion between BP and CE.

manipulate than reed or wood, it is not be unreasonable to suppose that wood flutes predate bone flutes, that sticks and rattles predate flutes, and that singing pre-dates any sort of instrument making. If so, then some form of instrumental music might well have existed more than 100,000 years ago, singing at an even earlier stage. Whatever the date, music is a very old part of human life. It may even have been part of other hominid behaviour, given that the Slovenian bone flute was discovered in a Neanderthal, not human, burial site.²⁰ Given that sort of time span, perhaps the origins of music ought to be considered in terms of evolution theory.

Evolutionist theories

Evolutionist theories of music try to explain its origins in terms of evolutionary adaptation, by which is meant the ability of a species to find effective strategies for survival by means of adapting to their environment. One such theory, presented by Merker (2000), is that music derives from the synchronous chorusing of higher primates. Merker's theory runs roughly as follows.

Chimpanzees in the forests of equatorial Africa live in highly territorial extended family groups. To produce the healthy offspring necessary for the survival of their species, they cannot breed within their own group. Their mating behaviour has therefore adapted so that females from one extended family group go off individually to mate with males from another. Invisible because of dense foliage, a gang of males in the other group draw the approaching female's attention by producing a concerted chorus of vocal sounds. She pays no attention to individual males outside the gang but to those who make the most striking sonic display within the chorus, such behaviour being identified with social acceptance and cohesion, as well as with strength and dominance. You need only think of an insecure young woman's attraction to the loudest lout in a cohort of lager-swilling soccer hooligans, or to the most garish virtuoso in a heavy metal band, to get the general picture.

These observations of behaviour among one type of primates (chimpanzees, not lager-lout or rock-band humanoids) may be important, but it is doubtful whether they explain the origins of the *human* phenomenon of music. The problem lies in the assumption that all primates from which we descend, or to which humans are similar, regulated mating and the procreation of their species in a similar way for long enough for that behaviour to become genetically hardwired, a process taking millions rather than thousands of years. Failing that interpretation of the theory, the assumption has to be that the primate mating behaviour was somehow passed on automatically by learning from generation to generation and species (primates) to genus (*homo erectus*) to genus (*homo sapiens*) without entering the human genome, an unlikely explanation, given the extent of environmental and social

20. Most music archaeologists now agree that the object *is* a flute and that it was made by Neanderthal man (for ongoing argument, visit | www.webster.sk.ca/greenwich/fl-compl.htm | 02-04-30). *Homo erectus*, evolving from earlier hominid forms which evolved from the higher primates at least 3½ million years ago, develops into two genus: *Homo neanderthalensis* (c.400,000-50,000 BP) and *Homo sapiens sapiens* (humans, from c.150,000 BP). Humans wipe out Neanderthals around 50,000 BP and have not yet (2002 CE) quite managed to eradicate themselves and the rest of life from the planet, however hard some powerful members of our species may be trying. Fig. 1:2 is taken from Cross (1999).

change we have had to confront over the last 100,000 years or so.

Dissanayake (2000) puts forward a different theory, arguing that 'it is in the evolution of affiliative interactions between mothers and infants — not male competition and adult courtship — that we can discover the origins of the competencies and sensitivities that gave rise to human music.' This more palatable theory aligns with observations, presented earlier, about musical 'universals', more specifically with those relating to pulse, timbre and mode of vocal articulation (see p.6,ff.).

Several other theories stress the importance of what Brown (2000) calls 'musilanguage', i.e. that language and music, both sonic and both neurologically intertwined, stem from a common origin, 'evolving together as brain size increased during the last two million years in the genus *homo*' (Falk 2000). Like Dissanayake's mother-and-infant theory, this explanation also seems quite plausible because both *Homo sapiens* and Neanderthal man had, if our knowledge of the Slovenian bone flute and other early human instruments of music are anything to go by,²¹ clearly started to treat oral language and music as distinct modes of communication. Although neurologically interrelated, these two sonic systems were used for different functions. This aspect of evolution is important because the separation of music from language can be seen as a trait distinguishing humans from other animals.²²

One common objection to the theory of distinction between music and language as a basis for understanding the origins of music as trait of *human* behaviour seems to argue that if we, as humans, say that birds and whales sing, then we are talking about music, simply because that is how we hear it. The sonic habits of humpback whales provide fuel for this argument. As those great mammals migrate or swim around their breeding grounds, they piece together repeated phrases, singing song after song for up to twenty-four hours at a stretch. Humpback whales have a seven-octave range similar to that covered by the piano keyboard, i.e. a range of fundamental frequencies well within the limits of what humans can hear, and much larger than the restricted range of pitches the human voice can produce. As the months go by, the whales modify their song patterns and most males end up by singing the same new song after a while. Moreover, humpback whale songs contain rhythms and phrases which, strung together, build forms of a length comparable to ballads or symphonic movements. It also seems that their songs contain recurrent formulae which end off different phrases in much the same way as we use rhyme in poetry. One theory about rhymes in whale song is that they help in the breeding season when the males have to remember 'what comes next': the more elaborate the whale's song pattern, the more likely it is to rhyme.²³

21. The oldest *human* instrument found so far that is still playable dates from 9,000 BC and was found in Jiahu (China). See www.webster.sk.ca/greenwich/FL3DEBAT.HTM#From [2002-03-07].

22. For example, during my studies in Manchester (1965-66), I noticed that my landlady's dog, Rex, would go and lie on his cushion in the kitchen whether you shouted 'cushion' or 'Khrushchev' at him, as long as you used the right tone of voice. He would not obey if you yelled 'fusion', 'motion', 'couche', or 'bush', nor if you said 'cushion' or 'Khrushchev' with insufficient conviction. In order words, phonematic (typically linguistic) distinctions seemed to be less operative than those of intonation, duration, rhythmic patterning, dynamics and accentuation.

23. The source of information for the whole of this paragraph is Milius (2000).

All these traits of whale song come across as typically musical to the human ear. But the 'music' of the animal kingdom does not stop there: certain insects produce rhythmic patterns, some even metronomically regulated, which, like those of human music, vary and repeat in longer patterns. More importantly, eleven percent of primate species can produce short strings of notes that, although less musical to our ears than the singing of humpback whales, form a recognisable pattern in time. This behavioural trait, characteristic for most of our own music, is thought to have evolved independently four times within primates.²⁴ All this evidence seems to suggest that music is *not* exclusive to the human species.

The problem with the objections just raised is that they are anthropocentric, i.e. that they interpret *non-human* behaviour on the basis of *human* experience, perception and behaviour. The ANIMALS MAKE MUSIC standpoint assumes, in other words, that the whales, insects and primates just mentioned hear and react to the sounds they make themselves as we hear and react to them (as music), and that the animals produce those patterns of sound for the same reasons as we make what we hear as comparable patterns of sound in our music. Indeed, Thomas Eisner, Professor of Entomology at Cornell University and an accomplished classical musician, holds that we must 'draw a distinction between enjoying animal sounds [as music] and saying that animals make music', even though, after hearing recordings of humpback whales, he admitted: 'if a whale calls me up tomorrow and wants to do an evening of sonatas, I would be the first to volunteer' (Milius 2000). Similarly, although we hear birds as the greatest songsters of the animal kingdom, it is, once again, highly improbable that they make, hear and use their melodies as we make, hear and use our music. Leading US ornithologist Eugene Morton is quite adamant in his refutation of anthropocentrism in relation to birdsong.

'Any analogy to human music is not interesting to me. It doesn't explain anything about how the world is, except how humans want to perceive it. Good on 'em, but I want to understand animals... Birdsong constitutes an avian broadcasting network, letting birds minimise the arduous work of flying about during interactions'.
(Milius 2000).

If singing can replace the amount of flying around birds would otherwise have to do in order to interact, it is certainly part of a symbolic system. For example, instead of physically repelling every potential invader of its own space, a bird can claim its territory through song; instead of flying round to see if local members of the species are all there before they shut down for the night and that they are all there again in the morning, birds can join in the evening and dawn choruses. Birdsong is in other words a strategy for the survival of individuals within the group, because everyone has to have their place to nest, and for the group as a whole, because they may all need to collect for foraging, migration or for other purposes. Singing is clearly an energy-efficient way for birds to establish these essential relations.

It would in a similar way be absurd to expect whales, who have to cover huge distances in search of food but reconvene for breeding, to keep visual or tactile underwater checks on the whereabouts of each other, as individuals and as family

24. Milius, op. cit., referring to Thomas Geissmann, at the Hannover Institute of Zoology.

groups, across vast stretches of ocean. In this sense, whale song, by replacing physical and visual contact with sonic communication, also acts symbolically to facilitate the social cohesion necessary for the survival of their species. It is also highly probable that, as with the chimpanzee chorus described on page 9, the various functions of sonic communication in the animal kingdom are linked with what we humans might qualify as pleasure and pain, tension and relaxation, etc., i.e. with what we think of as emotions and which are essential ingredients in the evolutionary process of most sentient beings.²⁵ If such 'emotions' are linked to situations in the animal kingdom where what we hear as their 'music' is used to signal messages we might understand verbally in terms like DANGER! or IT'S OK, WE'RE ALL HERE or PICK ME, I'M BEST, then it is also probable that the sounds in question are accompanied by patterns of hormone production comparable to those found in humans when stimulated in certain ways by certain sounds in certain situations.²⁶

If there is any truth in the line of reasoning just presented, it would seem that there may be grounds for calling that animal 'music' music. After all, the argument would go, what we have described tallies quite well with the seventh of our eight axioms about music (p.5), with our observations about 'concerted simultaneity and collective identity' (p.5), and with several other points mentioned under our working definition of music (pp.4-8). However, there is at least one human trait that animal 'music' does not exhibit: unlike humans, animals do not appear to have two distinct symbolic systems mediated as sound, one system — language — more suited, though not wholly dedicated, to the precise denotation of objects and ideas, the other — music — more closely, though not entirely, related to the expression of movement, gesture and emotion (see axiom 4, p.4).

As stated earlier, language and music, both neurologically intertwined and both using the sense of hearing, seem to stem from a common origin, evolving together as brain size increased during the last two million years of evolution in the genus *homo*. However, it is first after we humans managed to wipe out our Neanderthal cousins (c. 50,000 years ago) that we start to leave technologically complex objects behind us, the most common of which are musical instruments made of non-degradable materials like bone. The appearance of so many musical instruments so early in our archaeological history indicates that *Homo sapiens sapiens* must have attached considerable importance to music, while the relative absence of such artifacts in remains of *Homo erectus* and *Homo neanderthalensis* suggests that our hominid predecessors either lacked the technological skill to create such instruments or that music (as we know it) played a less important part in their lives.

In short, the separation of sonic representation into two distinct but related spheres of activity — what we now call language and music — may have started to evolve in our hominid precursors but seems to have developed most explosively af-

25. For example, the human tendency to like the taste of sweet, heavy food is probably grounded in the need of our ancestors to ensure they consumed enough carbohydrate fuel to provide the energy necessary for survival. With more abundant food sources and a more sedentary lifestyle, humans have to consciously correct that genetic trait.

26. There is no room here to enter this realm of biomusicology. For more information, see section 'Biochemical Evidence', especially about naloxone, testosterone and oxytocin, in Huron (1999).

ter their demise. Moreover, there is no evidence to suggest that any other species extant in the animal kingdom uses two distinct sonic systems of representation, one to communicate information and a different one to express corporeal or emotional aspects of that information. For example, a blackbird joining in the dawn chorus does not seem to distinguish sonically between, on the one hand, what we would think of as a verbal statement like I'M HERE AND I HEAR YOU'RE ALL THERE and, on the other hand, whatever sensations she might have on waking up and on registering that she is chirping away in her own place, that her neighbours are in theirs, that there are males and fellow females in the vicinity, and that she's not the only one of her kind around. We humans seem to be the only species to make such a distinction between those modes of sonic representation. Cross (1999) argues that this distinction between language and music may be the most important thing humans ever did. We will return to this point at the end of the next section which deals with music's importance for another aspect of human development: the process of socialisation.

Music and socialisation

At the age of minus four months most humans start to hear. By the time we enter this world and long before we can focus our eyes on objects at different distances from ourselves, our aural faculties are well developed. Most small humans soon learn to distinguish pleasant from unpleasant sounds and most parents will witness that any tiny human in their household acts like a hyperactive radar of feelings and moods in their environment. You know it's no use telling baby in an irritated voice 'Daddy's not angry' because the little human sees straight through such emotional bullshitting and starts to howl.

But baby's hearing is not what most parents notice first about sound and their own addition to the human race. They are more likely to register the little sonic terrorist's capacity to scream, yell, cry and generally dominate the domestic soundscape. Babies are endowed with non-verbal vocal talents totally out of proportion to other aspects of their size, weight and volume: they have inordinate lung power and vocal chords of steel, it seems, capable of producing high decibel and transient values, cutting timbres and irregular phrase lengths, all communicating messages like I'M UNCOMFORTABLE or I'M IRRITATED or I'M IN PAIN, or I'M HUNGRY, SO DO SOMETHING – NOW! and which parents have to interpret in terms like CHANGE MY NAPPIES or PRODUCE EITHER BREAST OR BOTTLE FOR IMMEDIATE CONSUMPTION. Maybe these tiny humans have to yell not so much because they can't speak as because they need to dispel whatever state of adult torpor we happen to be in, be it watching TV, chatting, reading or, worst of all, sleeping. Babies seem to know in advance that sharp timbres at high pitch and volume carry extremely well, cutting through whatever constant underlying hum or mumble there may be in the adult world, be it idle conversation, the TV on in the background, fridges, ventilation, etc. Also, irregular rhythms and intonation by definition avoid the sort of repetition that can gradually transform into ambient (background) sound: a baby's yell is always up front, foreground, urgent, of varying periodicity and quite clearly designed to shatter whatever else mother, father, big sister or big brother is doing. That sonic shattering is designed to provoke immediate response. Desires and needs must be fulfilled *now*.

NOW is the operative word in this context. Sonic statements formed as short repetitions of irregularly varying length are also statements of urgency, as well we know from the anaphones of news and documentary jingles — IMPORTANT, FLASH, NEW, THE LATEST UPDATE. Babies seem to have no conscious past or notion of future: all is present. The baby's lack of adult temporal perspective in relation to self is of course related to its lack of adult senses of social space, which, in its turn, relates to baby's egocentricity, essential for survival in the initial stages of its life.

In the perspective presented so far it is clear that non-verbal sound is essential to humans. We monitor it constantly from inside the womb until death or deafness do us part from its influence. We use our non-verbal voices to communicate all sorts of messages from the time we are born until we die or turn dumb. Together with the sense of touch, non-verbal sound is one of the most important sources of information and contact with social and natural environments at the most formative stages of any human's development. It is vital to senso-motoric and symbolic learning processes at the preverbal stage of development and central to the formation of any individual's personality. Moreover, everyone has experienced the process by which we gradually learn that we are not the centre of others' constant attention, nor can we be constant objects of immediate consolation or pacification: we have to get used to being just one human subject and social object among many other fellow human subjects. We have to have some sort of working relationship with whatever society and culture we belong to and we cannot live in the vain hope of returning to a state where we are the sonically dominant or foreground figures: we can never regain any imagined or real lost paradise, whatever advertisers may want us to believe.

Different cultures and subcultures establish and develop different patterns and norms for what course the process from baby via child to adult should run. The ultimate goal — being the ideal male or female adult — depends on whatever the society in question, on account of its material basis and cultural heritage, sees as desirable, useful and good. Assuming we have all been babies and if, as suggested here, baby's power over the domestic soundscape in the early development of every human is a biological necessity that must be relinquished for that individual to survive among fellow humans in adulthood, then we ought to gain important insights into how any culture works by studying patterns of socialisation that relate directly to non-verbal sound.

Humans can emit a tremendous variety of non-verbal sounds. We have to breathe to stay alive, but we can also cry, shout, yell, call, gurgle, sob, sigh, laugh, giggle, burp, fart, crunch, slurp, gulp, swallow, yawn, groan, moan, growl, cough, splutter, wheeze, sneeze, smack their lips, kiss, hiss, spit, blow our noses, clear our throats, cough up phlegm, etc., while our hearts beat, our tummies rumble, while we walk, run, stroll, jump, hop, scratch our heads etc. We may shudder with fear, tremble with delight, or shiver with cold so that their our chatter. We can also make sounds by dragging, pushing, cutting, hitting, tapping, patting, clapping, caressing, chopping, sawing, hammering, grinding, scratching, scraping, slapping, splashing, smashing etc. Some of these sounds are loud, others soft; some are heavy, others light; some are fast, others slow; some are high-pitched, others not; some are long or ongoing and repetitive, others short and discrete. All these humanly produced

sounds are made within a context that is full of sound: in our society we have fridges, freezers, computer drives, traffic, aeroplanes, mains hum, air conditioning and all sorts of other machines; elsewhere we may be able to hear wind in the trees, rain, sea swell, animals, birds, insects, running water, thunder, earthquakes, ice breaking, crisp or slushy snow under our feet, waves breaking on the shore, etc.

Some of these sounds we make ourselves, others we just hear in a wide variety of acoustic settings, including those inside our own heads and bodies. Which sounds are evaluated as pleasant and unpleasant, which ones are deemed to be part of music and which ones not, will all depend on the culture we belong to and what sort of motoric and sonic behaviour prove to be generally compatible with the needs of that community, be it a youth subculture in late capitalism or a nomadic tribe from the stone age. These relationships between non-verbal sound, music and society are of course too complicated to be discussed in detail here. Suffice it to say that although many cultures have no equivalent to what we mean by 'music', no human society has ever been without it. All of us have been babies and all of us have had to learn that we cannot for ever remain at the centre of the world around us, acoustically or otherwise. We have to learn to cooperate, to negotiate social space and uses for ourselves in relation to the community we belong to. Music and dance provide socially constructed sonic and kinetic frameworks for that learning process: most of us learn to sing, hum and whistle in accordance with the norms of what our culture regards as music, rather than just yelling, laughing, mumbling, or bashing objects at will in an uncoordinated or unpatterned manner. As we acquire the gift of language we learn to distinguish between humanly organised verbal and non-verbal sound. Moreover, many of us go on to learn how to play an instrument as a way of making sound whose functions are quite different not only to those of spoken language but also to those we make when chopping wood, hammering nails, ironing clothes, doing the washing up, flushing the toilet, taking a shower, walking upstairs, driving a car, eating food, operating machinery, folding a newspaper, closing the door, etc., etc. It would, from the perspective just presented, be absurd to regard music as some sort pleasant but parasitic appendage to human life — 'auditory cheesecake' as one writer put it.²⁷

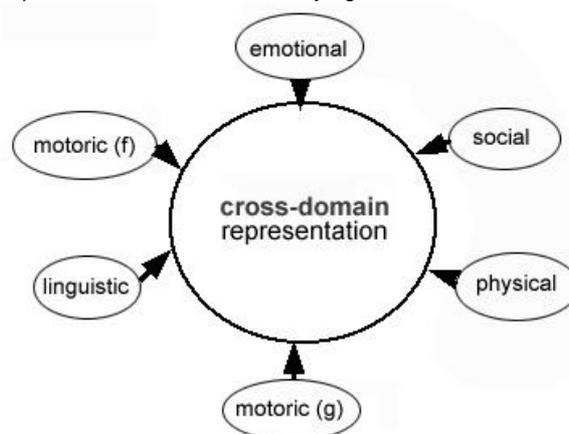
There are other reasons for understanding music as an essential part of the survival kit for any human society, not as just the cultural icing on the cake of production and economy. These reasons are presented by Cross (1999) and can be summarised in the following simplified terms.

As we have seen, the distinction between two modes of sonic representation (language and music) appears to be a specifically human trait. In fact, the human capacity to process signals from the world around them via different *domains of representation* (verbal, visual, motoric, emotional, etc.) seems to have been one of our species' great advantages in the evolutionary struggle in that we can sort out abstractions of cause and effect by distinguishing between visual, verbal, sonic and motoric impulses. Those domains of representation are even located in different

27. The 'parasitic' notion comes from D Sperber's *Explaining Culture* (Oxford, 1996), that of 'auditory cheesecake' from S Pinker's *How the Mind Works* (London, 1997). For critique of these notions, see Cross (1999).

parts of the brain so that what we hear at a particular time (a sonic event) does not have to represent the same phenomenon as a movement or emotion we may experience at that same time: having to rush up in a panic as the alarm clock goes off does not mean the alarm clock is stressed out, so to speak. Of course, such 'domain-specific' signal processing in no way prevents humans from making connections between several simultaneous domain-specific signals if they co-occur on a regular basis. For example, when a loving parent talks in a sing-song voice to a baby while holding and rocking it, the little one receives signals that are at the same time specific to the sonic, motoric and emotional domains of representation. As these *combinations* of domain-specific signals are repeated, the infant learns to make connections between them so that another, overriding or 'embodying' type of representation comes into play. Such combinations of sonic, motoric and emotional signals are sometimes called *proto-musical*.²⁸

Fig. 1:3 Domains of representation and the 'embodying' cross-domain level²⁹



The specific domains relating to (proto-) musical representation, shown in figure 1:3, are all basically intuitive. They are: [1] *physical*, i.e. the ballistics and trajectory of a body, including one's own, travelling through space; [2] *gross motoric*, i.e. the movement of arms, legs, head, etc; [3] *fine motoric*, i.e. muscular control in moving, for example, fingers, eyes and, most importantly for music and language, vocal chords; [4] *linguistic*, i.e. prosodic patterning;³⁰ [5] *social*, in terms of knowing which sounds or movements produce what effect on you and those around you; [6] *emotional*, in terms of evaluating a situation in response to different body states such as posture, muscular tension or relaxation, adrenalin count, etc.

It should be clear that music is a particularly human type of activity which lets us mix elements from all the domains just mentioned into an integral whole. It is an activity that allows us to represent combinations of signals from its constituent domains in *symbolically* rather directly interactive terms. It lets us engage in interpersonal activity on many levels, either by making music together or by responding to it. To express ourselves on all these levels, we humans do not need to confront

28. Cross (1999), drawing on Karmiloff-Smith (1992).

29. *Motoric (f)* means fine motoric, *motoric (g)* gross motoric (see text below figure for explanations).

30. By *prosody* is meant the 'musical' elements of speech, i.e. intonation, timbre, accentuation, rhythm, dynamics, etc., not the 'actual words' carried by the prosody or just written on the page.

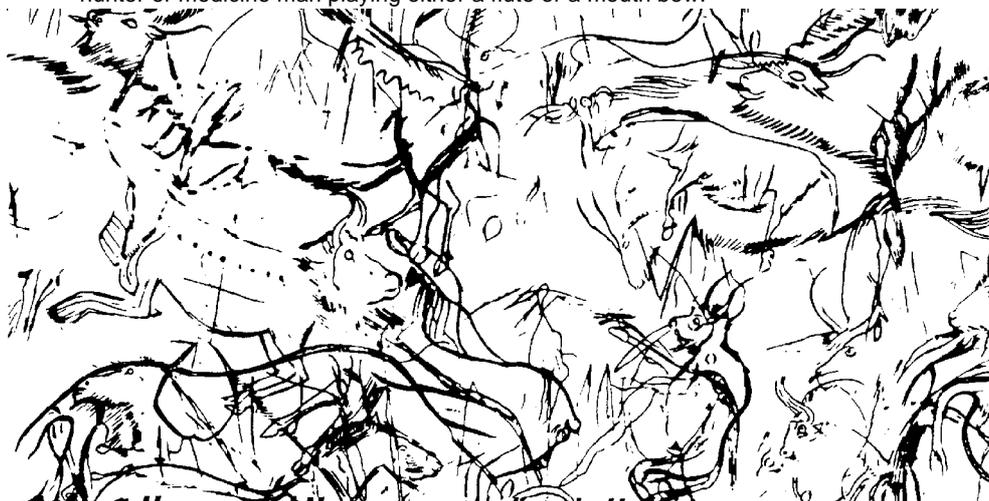
each other with symbolically unmediated emotional, motoric or physical actions: we can use music instead. In other words, music enables relatively *risk-free* action by providing socio-culturally regulated forms of potentially *risky* interaction between humans. It also helps our cognitive flexibility, i.e. the ability to mix, switch and correlate across different domains of representation. Viewed from this perspective music may well be, as Cross (1999) concludes, 'the most important thing that we humans ever did'.

Chapter 2

Pre-agrarian society

Acts of communication between humans or between humans and animals or the sounds of rhythmically patterned work, the sounds of animals, the sounds of nature itself etc. can all be taken out of their original context, imitated or transformed, and used by humans for musical purposes. For example, the concerted calling of human voices when those humans already have each others' attention, or the use of voice or body to imitate the sound of footsteps, animals, the wind, thunder, rain etc. all constitute humanly produced sounds that do not function in the same way as whatever sounds they were originally supposed to represent or reproduce: they have all become symbolic at a different level and are used by humans to communicate in a special way with each other. By becoming part of a humanly organised system of symbols, such sounds also become social. Of course, these humanly produced and organised sounds could also be made using tools, utensils or instruments rather than just the voice or human body on its own. For example, instead of laying down a rhythm by clapping hands, you could always use two sticks. Similarly, stamping on the ground could sound much more powerful if you dug a hole, covered it with the skin of a large animal and stamped on that instead.

Fig. 1:4 Cave painting from Trois Frères (c. 10,000 BP). The masked figure in the middle may be a hunter or medicine man playing either a flute or a mouth bow.



This sort of transfer and transformation of sound from one level to another could, in pre-agrarian society, also assume the character of magic by being treated as a set of sonic actions considered capable of influencing the natural course of events. Sound could then be used in human interaction with the overawing powers of nature. Such sonic magic could in other words function like the utilitarian magic of the visual. For example, prehistoric hunters living in the vicinity of today's Trois Frères (Ariège, Central France) painted the large red bisons that used to roam Europe in their time (c. 10,000 BP) on the walls of their cave, adding images of themselves hunting those animals that meant not only danger and strength but also food and clothing to themselves, their family and community. Painting such scenes fulfils two functions: (i) you can re-enact an exciting event and re-experience an im-

portant act that you maybe had no time to digest when you were involved in it: painting the picture is a process helping you to digest and fully appropriate the experience; (ii) you can prepare yourself for similar exciting events in the future: it will remind you of the right mood, put you in the right frame of mind and so on. If you paint yourself sticking spears into the bison and if your visual representations of the scene, as re-enactments and preparations for the job, are associated with successful hunting, then it is natural to assume that the two actions (hunting and painting the hunt) are connected. Put simply, if hunting influences your painting, then painting will influence your hunting. Thus, drawing yourself sticking a spear into a bison will influence the course of events when you next hunt. It's like the voodoo habit of sticking pins into models of enemies: if you do the magic with enough conviction your enemies will, you hope, suffer accordingly. How does such magic work with sound rather than image?

One of the Trois Frères cave paintings shows a herd of bison surrounding a man playing on what some musicologists consider to be a flute made from the hollowed bone of a dead animal (fig.4, p.18).³¹ **Why** play a flute in the middle of a herd of wild animals? Well, like most art, the painting is almost certainly non-representative in the sense that it does not depict 'what actually happened'. It is clear that the hunter would use the flute in more suitable situations (e.g. back at the cave) but that the sounds the hunter is making are somehow related to hunting bison, otherwise there would be no point in placing the hunter in such a central position of the painting. The most probable explanation is one of sonic ('musical') magic. Such reasoning would run more or less as follows: (i) playing a flute made from the bone of a dead animal — possibly a bison — makes sounds neither human nor bison nor anything else in nature can make identically; (ii) since these sounds are not in natural reality outside the human capable of making them, they are supernatural; (iii) the human can make and control these sounds both by having killed the animal from whose bone the flute is made and by having control over that instrument; (iv) by making and playing that flute and by producing sounds which cannot be created in nature without human intervention humans can easily imagine that they can influence nature to their own advantage. In this way, our ancestors thought they could link the events of life with their own wishes and it is highly probable that they used 'music' for such magical purposes.

Fig. 1:5 (a) Scored bone ('scraper') found in neolithic cave dwelling in Dordogne;
(b) 'Whirr' of scored bone, found in Lalinde (France)



Another sonic instrument with magic power is the notched bone which, scraped with another bone (they are often discovered in pairs), makes a creaking or groaning kind of sound (fig.5). These paired bones usually have quite a phallic appearance and the erotic power of such an instrument was obviously still strong amongst the Cheyenne people (North America) earlier this century, as the following story demonstrates.

31. The instrument could also be a mouth bow or even a 'scraper'. Some bone flutes have been found that are carbon dated to 10,000 B.C (start of change from palaeolithic to neolithic era in Europe).

Once upon a time there was a very beautiful girl in the camp. All the young men wanted to marry her. But she would have none of them. The Dog Warriors and the Fox Warriors then organised a dance. All young men did their best but the girl would not look on any of them. Then it was the turn of the Himoweyuhkis. They felt down-hearted because they were no better than the others. But a man who owned the power of the spirit spoke to them, saying 'The girl comes here to see you dance. She will fall in love with one of you and he will have her. Now fetch me a horn of a one-year-old elk — one without spikes — and the thigh bone of an antelope'. The young men did as they were bade. He cut the elk horn in the form of a snake and he cut forty-five notches in the snake. Then he prepared the antelope bone that would be scraped across the notches of the elk horn. The sound utensil was used in the dance. The girl was present and fell in love and married one of the young men.³²

Yet another instrument with magic power is the 'whirr'. It is also made of bone but is shaped like a lancet with a small hole in one end. Like the 'scraper', it is notched in patterns to improve its sound. You thread twine through the hole and whirl the 'whirr' round and round above your head. The buzzing, humming noise of this instrument was often thought to symbolise ancestral spirits or 'sounds amongst the clouds', i.e. distant thunder. At the *Viikita* ceremonies of the Papago people (South America) it was not uncommon to hear an orchestra of 'whirrs' being twirled by up to sixty men. Since the Papago considered 'whirrs' to be charged with magic, you had to be very careful. If your neighbour's 'whirr' hit you, you had to put your own 'whirr' on the wound or else you would be smitten by disease.³³

Two more stories about instruments of phallic shape should suffice to illustrate the magic powers of music in pre-agrarian cultures.

The young Cheyenne men played flute to help them in courtship. A young man could go to the medicine man and ask him to imbue the flute with his magic power so that the girl would come out of her hut when she heard the tones of the flute. The young man started to play his flute when he was still a little way off and approached the hut slowly. When he arrived at the hut, the girl sat outside waiting.³⁴

The second story is part of the myth of creation according to nomadic reindeer herders in Kamchatka.

It was in the days when The Great Raven was alive. Before they went inside, they heard the noise of a drum. They entered the house and found Universe hitting a drum and his wife Rain Woman sitting beside him. To make rain he cut off his wife's sexual organ and stretched it on the drum. Then he cut off his own penis and hit the drum with it instead of using a stick.³⁵

In order to understand the cultural reality of magic, it is important to remember that in pre-agrarian society people lived as hunters / fishers or as collectors (of

32. Curt Sachs: *The History of Musical Instruments* (New York, 1940) p. 43, quoted in Ling (1983:8), retranslated into English by PT.

33. Ling: 1983:8, quoting Paul Collaer's 'Amerika, Eskimo und indianische Bevölkerung' in *Musikgeschichte in Bildern* 1:2, p. 52 (Leipzig, 1967).

34. Same source as footnote 33.

35. Female reindeer herder in Kamchatka, quoted by Ling in unreferenced handout to music students at the University of Göteborg (SÅMUS / Musikhögskolan), 1973. According to this story, it was this act of sonic magic fertility — Universe using his penis drum stick to hit Rain Woman's labia drum skin — that created the world.

roots, fruits etc.) and that they made use of nature without ever being able to tame or control it. Magic almost certainly played a central role in the world view of such societies because it provided a viable mental framework for expressing interaction and interdependence with nature in a situation where the survival of the human species depended on successful hunting, fishing or collecting and where the forces influencing the success or failure of those activities were very much more out of human control than in more recent types of society.

As Europe came out of the ice age, large forests gradually spread across the continent. These forests contained plenty of game and the rivers were full of fish. Such natural riches meant a dramatic increase in the number and spread of humans populating the continent. These vagrant hordes of humans adapted their hunting methods to changes of climate and fauna. Hunters started making spears of stone, bone or ivory while fishers made harpoons and nets. Stone axes were refined enough to allow the construction of decent timber housing, while boats and sledges facilitated transportation. In this sort of society, which was probably matriarchal, there was neither division of labour nor organised cooperative effort to tame nature on a permanent basis. Judging from people living in societies of this kind in recent times, our ancestors must have been extraordinarily skilled at seeing and hearing details, i.e. they possessed the sort of perceptual keenness necessitated by a constant and immediate struggle with the forces of nature at close quarters. Anthropologists have deduced that such cultures were probably monistic in the sense that, unlike later societies in which humans were supposed to consist of a mortal body and immortal soul, each human was regarded as one single and undivided being struggling for life without the support of any god. This sort of 'realist magic', in which humans thought they could influence the natural course of events to their advantage by constructing representations — in sound, dance and picture —, was probably highly sensualist.



Fig. 1:6 Four horn-headed trumpeters. Rock etching c. 1200 BP, Bohuslän, Sweden. Such instruments were used for ritual as well as signalling purposes.

Early agrarian society

Between around eleven and five thousand years BP, our European ancestors changed their lifestyle quite radically. Thanks to new discoveries that came from the East, such as improved tools and better types of grain, the main means of human subsistence gradually changed from hunting, collecting and fishing to growing crops and raising livestock. This new way of life meant that hunters' camps gradually gave way to agrarian settlements of much greater permanence. In short, our ancestors abandoned a nomadic existence for the more stationary life of resident communities.³⁶

Such agrarian settlement brought about a vast number of changes, the most obvious ones being (i) that people were no longer permanently on the move, (ii) that they were better sheltered from wild animals and the elements in houses built of wood, stone or mud, (iii) that more mouths could be fed. Agriculture and cattle rearing also brought about the need for new utensils and settled residence meant that those objects could be larger and heavier than in nomadic times when all belongings had to be carried from one encampment to the next. Household utensils particularly important for music were the various vessels, vases, bowls, barrels, pots, pitchers, flasks and urns used for storing food and drink, because such receptacles constitute the basic structure of many types of drum that evolved during this stage of the development of human society.³⁷ In many twentieth-century communities whose economy and technology are similar to those just described, the drum is often considered a female instrument, even to the extent of being taboo for males, while flutes and drum sticks, on the other hand, are more often thought of as male.³⁸

... the coronation drums have drum sticks made of human bones resembling a phallus. In order to obtain drum sticks of sufficient magical power for the annual festivities, the royal drummers used to proceed as follows. They took away all the drums except for one. After that it usually so happened that a clever onlooker would come after them with the last drum, saying 'you forgot this one', upon which they caught him, killed him and made new drumsticks with his upper arms.³⁹

In the following account, drums are associated with milk, with milk churns, with cows and with pouring white liquid into receptacles. The drum skins also need to be kept warm, they have a line running down the middle and they gain power from white liquid.

... in a small enclosure stood the hut containing the royal drums. Inside the hut was a bed with room for two drums. Material for repairing the drums was kept behind the hut and was jealously guarded so that it would not be used for other purposes. In front of the bed stood a milk churn belonging to the drums and in which their daily dose of sacrificial milk was poured. It was the two main drums that lay on the bed. They were made of white drum skin with a black stripe over it, this making them look like eyes in the darkness of the hut. A herd of holy cows provided the daily sacrificial milk which was put in the hut every morning. At about nine or ten in the morning it was considered that the spirits had taken the goodness out of the milk and the rest of it could then be drunk by the guards. A woman looked after the fire in the hut: it had to be kept continuously burning because the drums needed heat. Cattle were sacrificed to the drums when one of the chiefs had just got a son or when he had returned from a successful campaign of war. Every year the king offered cows to the drums which ended up with a considerable herd. The cows were holy and the king decided which of them should be killed and who should carry out

36. This was a gradual process. First came burn-beating — new land was cleared and crops sown. After a couple of years the land was burnt and the community had to move on to find new, unused land. Such communities covered huge areas in their search for new land. Fully permanent settlement was only possible once basic principles of crop rotation were known and applied.

37. e.g. the vase drum; cf. also the expression 'oil drum'.

38. See creation story (Universe and Rain Woman) from Kamchatka, quoted on page p.20.

39. Unreferenced handout distributed by Jan Ling to music students at the University of Göteborg (SÄMUS / Musikhögskolan), 1972.

the sacrifice. Only the guards were allowed to eat the meat and the skin was only allowed to be used as repair material for the drums.

(Banyankole, East Africa⁴⁰)

The female characteristics of the drum and the male connotations of drum sticks meant that such instruments were quite appropriate for use in ceremonies related to fertility, birth and death. However, we have only discussed the possible uses of music in connection with directly interventionist magic in nomadic society and have yet to explain the development of rituals, such as the ones just cited, connected with fertility and death. In fact, to understand the further development of music, it is necessary to discuss two other interrelated consequences of settled residence and of an economy based on cattle rearing or agriculture. One consequence of general importance for the development of music is a change in world view from magic to animism; the other is related to processes of social stratification.

From magic to animism

The change from nomadic to settled living was accompanied by a change in attitude to the notions of residence, dwelling, domicile and 'belonging'. The residence of a community in one and the same place over several generations is a prerequisite for the establishment of traditions linking members of the community with the land they originally occupied and on which they now work, live and depend. Such settlement is in other words a prerequisite for the development of notions of 'home', 'roots', territorial property etc. and for the establishment of traditions associating physical or geographical place with (a sense of) community. Living in one place also means that the world will seem to move around you far more than if you yourself move around from place to place. Your surroundings, basically the same from one day to the next, will seem to be imbued with a constant power of their own. Unlike the nomad hunter, the peasant farmer can, for example, observe the same earth in the same field yielding year after year various crops (in rotation) with varying degrees of success according to the power of the elements. Unlike nomads, village dwellers can also see exactly the same trees grow and shed their leaves according to the yearly cycle of seasons that seem to embody birth, growth, decay, death and renewal. Observing humans in your own community or animals in your own herd dying and being born in more or less the same place can also be understood as offering village dwellers, settled in one place, a greater sense of nature's continuity because nature's powers are embodied in the same objects around you and because those objects are in demonstrable existence before you are born and after you die. With such dependence on the same natural environment, especially on the earth and the crops it can yield, growth and regrowth, birth, death and fertility all become essential concepts because they seem to embody processes endowed with powers of their own that sustain or threaten human life.

It is therefore hardly surprising that the sensual, interventionist magic of nomadic society was superseded by animism when humans had settled for some time in agrarian communities.⁴¹ According to animist beliefs, any natural object (including

40. Same reference as footnote 39.

41. Animism derives from the Latin word *anima*, meaning 'breath', 'spirit', 'soul'.

everything from wood and stone to trees, animals and humans) can possess its own unseen power. Such objects and beings are thereby ascribed a metaphysical soul, spirit or god.⁴² Thus, instead of directly practising magic on natural reality, humans living in agrarian settlements started to believe that fate was connected to forces that could not be directly influenced but which could be appeased in special places at special times through special ceremonies and rituals at which spirits or gods were invoked in their capacity of humanly constructed intermediaries between the forces of nature and the community to act on behalf of the latter. Indeed, it is at this stage that humans, observing themselves as part of the same cycle of birth, growth, decay, death and renewal as found in the rest of nature, began the ceremonial burial of their dead. Funerals were in other words conducted as though there were a life after death. Of course, music played a central part in virtually all ceremonies in which gods and spirits were presumed to hold power over the cycle of life, growth, decay, death and renewal.

Social stratification

With the new agrarian economy, the forces of nature were tamed (domestic animals, cultivated land etc.) and new inventions, such as the wheel or the utensils already mentioned, contributed to a division of labour. Some people concentrated more on making tools, wheels, carts, utensils, receptacles etc. while others continued working the land or herding cattle. As these societies progressed from stone age to bronze and iron age technology, such division of labour had to increase in order to make more efficient use of human resources in the community. With the taming of the horse, the trade of blacksmith was added to those of carpenter, turner, wheeler, potter, etc. In other words, some people (and their families) became craftsmen while others remained peasant labourers. There were, however, more sweeping social changes in operation.

The new agricultural economy and the new inventions in its wake meant that a community could grow more food. This, in turn, meant that grain could be stored in the event of disasters like crop failure, flooding or drought and (at least in theory) be distributed to the community in such emergencies. However, increased food production also meant that more mouths could be fed and a consequent population increase would in turn demand that more land be cultivated or converted into pasture. Now, if your community was suffering from a food shortage for some reason (e.g. rapid population increase, natural disaster, depletion of food reserves) and if no new land was available, the survival of your community would depend on your ability to acquire new food or land (or both), sometimes from another community. Whether you were carrying out such a raid yourself or being attacked by others, it would be convenient to have some good warriors on hand to bear the brunt of fighting, killing and dying that so often seems to have accompanied such conflicts of interest between communities. Since the welfare of your own community depended in

42. Metaphysical, from the Greek *meta* (μετα here, as in the word metalanguage, = 'besides', 'over and above') and *fysikós* (φυσικός = 'belonging to external nature') basically means 'to do with or having the character of anything over and above physical reality'. A metaphysical world view entails ascribing the ultimate cause for all events (from the creation of the universe down to ants carrying a blade of grass) to one or more absolute beings whose physical existence cannot be proved.

this context on the skill of your warriors and since virtually all warriors were men, strong and courageous males became important and influential figures in society.⁴³

However, mighty warriors could also abuse their power by threatening to exert the violence of their trade upon individuals in the home community with whom they disagreed. It must surely have been prudent to avoid displeasing a powerful warrior in your community, even if his demands may have been excessive or unjust (e.g. more food and a larger house than yours, your daughter in his harem, your goods or services without payment, etc.). It was in such ways that matriarchy was superseded by patriarchy, even to the extent that many powerful warriors ended up as chiefs or kings of their communities.

With increasing class inequality, it also became necessary for privileged members of society to employ warriors to guard the community's food supplies not only against attack from outside but also against the wrath and hunger of society's underprivileged members. Such inequality demanded some sort of rationale making it appear as though social injustice was the most natural and unquestionable thing in the world: the wealth and privilege of some and the poverty and misery of others had to be seen to exist, not as the result of greed and oppression, but as part of the natural order of the universe, as an unquestionable, god-given truth. To this end, the old trade of community rain man, shaman or medicine man was upgraded and updated from magician to priest under the auspices of the tribal chief. In return for special services rendered mediating with gods on behalf of the warrior class with its kings and chiefs, the magician-turned-priest was himself granted considerable powers and privileges.

This gradual social stratification, based on an originally rational division of labour, into a hierarchy of upper and lower classes is a prerequisite for the subsequent establishment of 'high' and 'low' cultures within the same society. After this short socio-anthropological account, it will be easier to understand the causes and character of a musical class society, with its division of music into the 'high' and 'low' categories that have remained with us to the present day.

43. Due to lack of contraception and of pension schemes (this obliging parents to produce as many children as possible as the only security for their well-being in old age), most normal women of fertile age were probably almost permanently pregnant and therefore less able than men to wage war.