

by the proximity of the hand. Because of the use of an external agent, I include it among the musical instruments.⁹

One cannot expect paleolithic documentation for the use of hand-song but later evidence is abundant.¹⁰ Figure 1a shows a musical group on an Egyptian boat model (Hickmann 1956: Pl. LXXXVIII) from about 2000 BC (Manniche 1987: 124). The singer (on the left) holds his right hand in front of the mouth. The musical group on figure 1b is a product of the Colima culture, Western Mexico (200 BC to 900 AD). The singer cups both hands before his mouth.

About 100 AD Tacitus (1914: 269) related that Germanic peoples possessed a battle song called *barritus* where "the shields being brought up to their lips, that the voice may swell to a fuller and deeper note by means of the echo." From Central Australia we have the following description of an aborigine initiation ceremony (Spencer and Gillen 1938: 285, 413n): "This calling out always takes the form of shouting 'pau-au-au' at the top of the voice, while the hand with the palm turned to the face, and the fingers loosely opened out is rapidly moved backwards and forwards on the wrist just in front of the mouth, giving a very peculiar vibratory effect to the voice. The call is said to induce fright and carry a great distance." One may, perhaps, see a survival of the custom in Sachs' frequent observations that "primitive" peoples on occasion disguise their voices by external means. About a trumpet shell held before a speaking mouth in New Guinea he wrote (1977: 48): "Once more a musical instrument was first used for the purpose of masking the voice."

Finally, the existence of hand-song is implied by current models of language origins (Hewes 1973, Krantz 1980, Falk 1980). Briefly stated,



Figure 1:

a) Music group on Ancient Egyptian boat model (dynasty XVIII) at The Metropolitan Museum of Art. The singer (to the left) shields his mouth with his hand, probably, engaged in hand-song.

b) Two musicians, one covering his mouth (for hand-song?) in The Mexican National Museum of Anthropology, Mexico City (Bernal 1980: Fig. 133).

⁹ Some might, arguably, label it song, meta-speech, etc., but (1) it involves an external tool (the hand, or any other object with sufficient surface area to cover the lips), (2) it is physiologically simpler than song since it does not involve a tuning ability of the vocal tract and cords.

¹⁰ Musicologists have not observed hand-song among Amerindians. However, such experts on North American Indian music as D. McAllester and T. Vennum, Jr. (private communications) consider it likely that it has indeed been practiced by some tribes. Another effect (called *ululation*) is used by 30-40 Plains Indian tribes; the tongue is moved rapidly and repeatedly inside the mouth cavity while a sustained pitch is sounded. The sound, and vocal tract acoustics, is similar to that of hand-song.

interpersonal communication in early man is considered to have taken place in two distinct modes: (1) by means of hand gestures and (2) by means of the vocal delivery system. The manufacture of stone tool led to considerable dexterity which permitted the early employment of the first mode. The latter developed later because of its larger complexity. All existing vocal languages consist of words composed of a limited number (less than 100) of phonemes. Combined according to vocabulary rules, the words form extensive lexica. In order to handle the phoneme/word