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Clicks and the idea of a human protolanguage

Hartmut Traunmüller

Department of Linguistics, Stockholm University

This paper disputes the arguments behind the idea that a human protolanguage had clicks that were independently retained in languages whose speakers reflect a very early divergence in the human population. It presents a less spectacular view of protolanguage, and it considers an advantage of clicks in hunting and peculiarities in the shape of Bushman palates, which may have helped clicks into speech.

1. Click languages and their speakers

Although clicks are widely used in human communication, their use is mostly restricted to interjections, in which they are not combined with other speech sounds. Only in southern and eastern Africa, are clicks are used in phonemic function. Outside this region, only one click language is known. It was called Damin, and it was never anybody's first language, but an artificial language known until the past century among initiated men of the Lardil tribe on Mornington Island, off Australia (Hale, 1992). In addition to clicks, all of them nasalized, Damin used also other sounds, such as ejectives, that do not occur elsewhere in Australia.

The African click languages belong to several different language groups that have not been shown to be related to each other. All the languages of the Khwe (Hottentots) and San (Bushmen) of southern Africa use clicks. These languages are often referred to as "South African Khoisan-languages", but this label does not imply a genetic relationship within the group (Westphal, 1971). Northern Khoisan, which includes Ju|'hoansi, is only distantly related to Central Khoisan, which includes Nama, and there are two southern groups, one of them now only represented by !Xóõ (Traill, 1985), that have not been convincingly shown to be related to any of the others.

There are two click languages, Sandawe and Hadza, spoken by a small number of people in separate regions of central Tanzania. Hadza has not been convincingly shown to be related to Sandawe or any other language, but the two share some old loans from neighboring languages. However, there are noticeable similarities in grammar and vocabulary between Sandawe and the Central Khoisan languages, which suggest a common origin or a tight prehistoric connection (Köhler 1973/74, Elderkin 1986). A striking example is the numeral "four": Nama, Xiri *hàká,* Nharo *hàkà,* Korana *haka* and Sandawe *haka-x.* This had, by the way, entered as a loan into two by now extinct Southern Cushitic languages, Asá and Kw'adza (cf. Rosenfelder, 2003). Clicks are used in another Southern Cushitic language, Dahalo, spoken far from the Hadza and Sandawe areas, close to the mouth of the Tana in Kenya. Dahalo has only one click, a dental that can be prenasalized (Nurse, 1986).

Finally, clicks are used in the Nguni-branch of the Bantu languages, which includes Xhosa, Zulu, Ndebele, Swazi, Sotho, the pidgin Fanagalo, etc. It is fairly obvious that the Bantu adopted the clicks from the San who lived in the region into which they migrated and whom they absorbed in the course of the past 700 years or so. The origin of the click in

Dahalo is more remote in the past. It is probably due to extensive contact between Southern Cushites and click language speakers in Central Kenya perhaps more than 2000 years ago (Nurse, 1986). In the light of this evidence of cases in which the use of clicks has spread into unrelated languages, we must assume that this can also have happened in prehistoric times: The presence of clicks does not imply a common origin of the languages.

In an investigation of variation in Y chromosome and mtDNA among African populations including the Hadza and the Ju|'hoansi San, it was recently found that these peoples are separated by a very great genetic distance (Knight et al., 2003), so that the separation of their ancestors appears to be among the earliest of human population divergences. The authors suggest that clicks are an ancient element of human language that has been independently retained by the ancestors of the Hadza and the Ju|'hoansi since before this divergence. While a hypothesis that considers clicks as Ursprache relics is not incompatible with the biological evidence, Knight et al. (2003) did not suggest any reason for why all other populations should have abandoned the use of clicks in speech. Their reasoning implies that clicks are only lost, never gained in languages, except once. However, we do not know of even a single instance in which a language has lost its clicks, while Dahalo, Nguni and Damin provide unquestionable evidence for the opposite having happened more than once.

As compared with the Hadza, the Sandawe may be genetically much closer to the Khoisan of southern Africa. According to ten Raa (1970), there are two regions in Sandawe country that differ not only in the culture but also in the physique of their population. The central region includes acculturated Bantu and Nilotes, while the people in the south-eastern region have "a short stature, a yellow skin, peppercorn hair, the epicanthic fold, excessive wrinkling of the skin at an advanced age, and a typical pentagonal Bushman-like skull: even steatopygia appears to occur in some women." All these features are commonly associated with Khoisan populations. This strengthens the hypothesis that before the intrusion of the Bantu, 1000 years ago, Bushman-like people and their click languages were present in a coherent region that extended from Mt. Kenya to the Cape. From these Bushmen, the use of clicks may have spread to unrelated peoples and languages, such as Hadza and Dahalo.

Except for the Bantu, who were pastoralists and practiced primitive agriculture, which is now also true of the Khwe and the Sandawe, the other peoples who use click languages all represent or represented until recently a more ancient way of subsistence as hunter-gatherers. This is of some relevance in a discussion of the origin and diffusion of clicks.

2. The Ursprache

The idea that the ancestors of all present humans once spoke a common language is very old. It is opposed to the idea that there was substantial variation at each stage in development from the most primitive pre-human communicational codes. In order to proceed, it helps to be clear about what distinguishes a structurally developed language.

One basic feature that is characteristic of spoken language is the association between sound and meaning in accordance with a more or less arbitrary convention. The use of arbitrary conventions is evidence of culture, but such conventions are not unique to humans. There are other species that show signs of culture and arbitrary conventions in their communication. It is clear that this criterion does not distinguish language with a developed structure from a more primitive code based on iconic gestures, sound imitations, interjections and sound symbolism, which our early ancestors are likely to have used. To the extent to which this involved conventional patterns, we must assume that there was dialectal variation, since such patterns tend to differ between groups who do not frequently communicate with

each other. We can assume that there was substantial variation of this kind both before and after the time when structurally developed language began to be used.

A structurally developed kind of language required a further step: the introduction of a dual structure or "double articulation" in which the association between sound and meaning is indirect and mediated by a set of conventional elements that are meaningless in themselves, i.e., by phonemes. Nothing new was involved in superimposing forms structured in this way on vocalizations. When the possibility of a dual structure had been discovered, it is likely to have spread not only to the offspring of the discoverers, but also to other groups who may have noticed its usefulness. In this scenario, the particulars of the "Ursprache" do not rank very high in importance. Other groups may have imitated the use of phonemes, but they may very well have chosen a slightly different set and coined their own words in addition to loaning them from the "Ursprache".

The assumption that clicks were part of the phoneme set of a human Ursprache rests on rather questionable reasoning: Clicks are observed to be used by peoples who represent the most ancient way of subsistence as hunter-gatherers in Africa, the Urheimat of modern humans. Based on this, their languages are assumed to represent a similarly ancient state. However, there is no evidence that would suggest a slower rate of language change among those who remained hunter-gatherers in Africa until the present as compared with the languages of others. It would be particularly odd to assume that early phoneme systems were similar to those of the Khoisan languages, since these systems are the most elaborated of all on Earth. A primitive protolanguage could not have sustained as many phonetic distinctions as these languages offer in their click accompaniments, phonation types and tones.

It is much more reasonable to assume that the speech sounds that first acquired a distinctive function were those that tend to be mastered first by children everywhere, i.e., as far as this is independent of the children's linguistic environment. On this basis, one could expect the vowels [i a u] and the consonants [p t k m n l] to have been used – and this is a close to exhaustive list. Initially, stops were only distinguished in place of articulation, and there were neither fricatives nor clicks.

Even at present, nearly all Australian languages lack fricatives, except in recent loans from English. Likewise, the old Dravidian languages lacked fricatives before they adopted loans from Indo-Aryan and other languages. These languages also lack distinctions in voicing and aspiration. However, they distinguish many places of articulation, which is less likely for a protolanguage. The Micronesian language Kiribati has a simple sound system, without fricatives, that one can imagine a protolanguage to have had, but in the case of Kiribati, this appears to be due to simplification of a more complex system.

3. Origin and diffusion of clicks

According to the Modulation Theory (Traunmüller, 1994), speech arises when speakers modulate their voice with conventional linguistic gestures. The voice as such is still used for conveying paralinguistic information about the speaker and his state and attitude. This is characteristic of all human speech. However, voiceless fricatives and clicks do not convey such paralinguistic information. Out of context, they do not even identify themselves as human sounds. Listeners who are not familiar with click languages tend to perceive the clicks as extraneous noise even within the context of a stream of speech.

The property of fricatives and clicks not to disclose themselves as human sounds appears to be exploited in cooperative hunting. Knight et al. (2002) report: "During stalking of prey, Ju|'hoansi revert to a hushed whisper-like communication. The speech is devoiced and consists almost entirely of clicks". Clicks are short in duration but more intense than other

speech sounds. They are easily audible to the prey as well as to the hunters, but if the prey does not recognize them as produced by a predator, their use is likely to positively impact hunting success. Thus, it may be that the phonemic use of clicks originated in the context of hunting. Subsequently, the use of clicks may have spread to other groups of hunters who noticed their advantage. This advantage is quite independent of a possible relationship between the groups and its recognition does not require a high frequency or intimate nature of contacts between the groups, although this condition was certainly fulfilled when the Bantu who migrated into southern Africa adopted clicks.

However, we are still left with the question of why the phonemic use of clicks did not arise elsewhere. Olle Engstrand, who had previously sought a connection between the origin of clicks and labial-velars, which also are used predominantly in Africa (Engstrand 1997), drew my attention to the possibility that an anatomical feature might be responsible: Four of the five speakers of !Xóõ, investigated by Traill (1985) had gently sloping palates without an alveolar ridge. Traill quotes a study by van Reenen (1964), according to which this feature is widespread in the San population. This feature reduces the amount of distortion of the tongue that is required in producing clicks, especially for laminal clicks. It predisposes speakers for the production of such clicks and thereby increases the likelihood for clicks to acquire a function in speech. In order to evaluate this hypothesis, it would be informative to know whether gently sloping palates without an alveolar ridge are common also among the Hadza and to what extent this trait was present in prehistoric African populations and elsewhere.

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