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LILIAS EVELINE ARMSTRONG AND HER DISCOVERIES IN SOMALI PHONOLOGY

Introduction

In the last three decades, and especially since 1972, we have witnessed a very substantial expansion of Somali language studies. At such a time it is perhaps profitable to look back along the road we have already travelled and to map the route ahead.

In my choice of paper for this Congress I was encouraged by the publication by Dr Axmed Cartan Xaange of an article in the first issue of the *Transactions of the Somali Academy of Sciences and Arts* where he gives a brief outline of the history of research into the Somali language and refers to the work of Liliias E Armstrong.¹ Although she was not involved in Somali studies as such and never visited Somalia, her article entitled "The Phonetic Structure of Somali" was of seminal importance. My paper is intended to be a tribute to the life and work of this scholar and thus a contribution to the history of our studies.

In compiling biographical data about her I received help, which I gratefully acknowledge, from several people: Mr Simon Bailey, the Archivist, University of London Library, Dr Beverley Collins of the Department of English at the University of Leiden, Ms G.M.Furlong, the Archivist, University College Library, Professor Eugénie Henderson of the School of Oriental and African Studies, University of London and Professor Jean-Paul Vinay of Victoria University, British Columbia, Canada. The late Professor J.R.Firth of the School of Oriental and African Studies also gave me some relevant information a number of years ago.

Life and work

Liliias Eveline Armstrong was born on 29 September 1882 in Salford, Manchester. She trained as a teacher at Leeds University, obtaining a B.A. degree there in 1906, and between 1910 and 1918 she taught at the East Ham Central School in London, where she was highly regarded and was expected to be appointed headmistress.

However, in her mid-thirties she developed a great interest in phonetics and studied for University of London extension examinations, which led first to a

Diploma in French Phonetics in 1917 and then to one in English Phonetics in 1918, with a Distinction in both. Her undoubted talents were soon recognized by Daniel Jones, head of the Department of Phonetics at University College in the University of London, and in 1917 he offered her a post of Assistant Lecturer in his Department. In 1920 she was appointed a Lecturer and in 1921 Senior Lecturer, but her promotion to Readership (i.e. Associate Professorship) came only shortly before her death in 1937, the budgetary stringency of the time being no doubt the cause of this delay, since on the grounds of her merits she deserved a full professorship. In 1926 she married an eminent Russian phonetician and dramatologist, Simon Boyanus, who had come to London to perfect his knowledge of English at University College. Liliás Armstrong was his principal teacher.

Daniel Jones and the members of his Department maintained close contacts with the various centres of linguistic research throughout the world and were themselves in its forefront, so that Liliás Armstrong found herself in a very favourable academic environment. Close links between University College and its neighbours, the School of Oriental and African Studies, where Liliás Armstrong gave some lectures, and the School of Slavonic and East European Studies, also provided an additional stimulus, offering her a wide experience of languages spoken outside Western Europe.

She won the reputation of being an excellent teacher, not only for her lectures on phonetic theory but also for her practical ear-training classes and seminars. She used a wide variety of languages for this purpose and arranged phonetic dictations in the mother tongues of her foreign students and language informants, including those from Eastern Europe, Africa and Asia. She insisted that her students should learn how to pronounce correctly the sounds, tones and intonation patterns of languages totally alien to them in order that they should develop a high degree of sensitivity of aural perception, on the plausible assumption that there is in adults a correlation between the ability to hear accurately the sounds of a foreign language and the ability to pronounce them correctly.

The testimony of Professor Jean-Paul Vinay, the distinguished Canadian scholar, who was one of her students and later a colleague, is typical of the opinions held of her teaching skills. He praises her for her patience and kindness and says that she opened up for him a new world of acoustic and articulatory experience of which he was totally ignorant when he began his studies under her guidance. He remembers particularly her ability to imitate with apparent ease the most exotic sounds of any of the languages she used as illustrations in her classes.²

Though she put a great deal of time and energy into teaching, Armstrong was

also very active in her research into phonetics, which extended to a wide range of languages including Arabic, Burmese, English, French, Kikuyu and Somali, and she published works on all these languages except Arabic, paying particular attention to their intonation and tonal systems. Her publications, which were well received by the international academic community, were characterized by clarity of presentation and meticulous care for phonetic accuracy in handling her data.

Her energy, patience and tact enabled her to play an important role in the running of the Department of which she was a member. Beverley Collins gives this testimony on page 123 of his dissertation on Daniel Jones:

"Jones always regarded her as occupying a special place among his members of staff, and when he was ill in 1920, she was nominated by him to run the Phonetics Department in his absence. A great personal and professional bond existed between them and he is said to have been deeply affected by her relatively early death."

Lilias Armstrong gave lectures in Holland (1922), in Sweden (1925 and 1928) and in Finland and the Soviet Union (1928) and had unusual powers of establishing friendly contacts with people of different nationalities and social backgrounds. We may venture to say that this ability contributed to her success in her research into Somali. She worked with two men who were, as far as I can ascertain, members of the sailor community in the East End of London and who would have been unaccustomed to the academic environment in which the research sessions took place, but she obviously won their confidence and full cooperation.

She gives their names as Isman Dubet of Adadleh and Haji Farah of Berbera, but no other information is available about them. It would be interesting to discover whether any oral traditions of their work in London are still preserved, since after all Armstrong's success was due to their ability and their integrity as language informants.

The achievements of Lilias Armstrong's life can be summed up by the words of Daniel Jones in the *Annual Report* of his college soon after her death, which occurred on 9th December 1937:

"By her outstanding knowledge and by her skill as a teacher, as an organiser and a research worker, and by her never-failing devotion to her colleagues and students, she succeeded in advancing the subject of Phonetics in no ordinary degree. Various recent improvements in modern language teaching in this and many other countries are traceable to her, through the hundreds of English and foreign language teachers whom she trained, as well as through her published works.

Particularly worthy of note is her work on the Somali language and the Kikuyu language of Kenya; as the result of her discoveries it is now possible for the first time to put the grammar of these difficult tongues on a firm basis and therefore to learn to speak them accurately."

Lilias Armstrong as innovator

Although Somali language studies were still in their pioneering stage in the first half of the present century, Lilias Armstrong had some predecessors in her work on Somali phonetics and phonology. In 1889 Kurt Bergold published his "Somali-Studien", the first attempt at a scholarly description of Somali speech sounds, which was then followed by more systematic and accurate accounts given by Reinisch³ in his *Die Somali-Sprache* and by Maria von Tiling⁴ in her *Somali Texte und Untersuchungen der Somali Lautlehre* where she presented the results of her extensive research into Somali phonetics. She was the first linguist who applied kymography and x-ray photography to her investigations of Somali. Some useful insight into the articulation of Somali sounds was also given by Czermak in his article "Zur Phonetik des Somali".

None of these works, however, dealt adequately with the vowel system and the role of tone since at that time linguistic science was not sufficiently developed to provide researchers with effective discovery procedures. Armstrong was much more fortunate in this respect since by the time she was conducting her research into Somali great advances had been made in linguistic theory.⁵ A theoretical framework was created by then in which the contrastiveness of sounds or groups of sounds assumed particular importance. The new methodology included the use of "minimal pairs", that is words or phrases distinguished by only one phonetic or tonetic feature, as a discovery procedure and as a check on the accuracy of the investigator's perception. Armstrong's work on Somali contains numerous examples of the application of this device.

She added only minor modifications to the description of Somali consonants provided by her predecessors, but she made major discoveries concerning the nature of the Somali vowel system and the role of tone in Somali.

Discovery of vowel harmony

Lilias Armstrong discovered that the Somali vowels were arranged into pairs of similar quality but in which one was more front than the other i.e. that the position of the raised part of the tongue was more advanced towards the hard palate and the teeth ridge in one than in the other. She thus established two series of vowels, which she called "fronting vowels" and "retracting vowels" respectively.

What is more, she found that the vowels of the affixes harmonized with the vowels of the roots in the sense that when the roots contained fronting vowels the affixes would also have fronting vowels and the same principle applied to retracting vowels. The use of the terms "fronting" and "retracting" rather than "fronted" and "retracted" was, no doubt, intended to reflect the operation of this vowel harmony which as her examples showed extended to all the vowels of not only the same words but even to whole phrases.

As Armstrong worked on Somali for only a limited period and her untimely death prevented further exploration her discovery was not complete. She did not formulate the exact rules which govern the spread of the harmonic groups of vowels when they extend beyond word boundaries, and she did not notice that in each of the two vowels represented in her work by *i* and *ii* there was a fronting and retracting variant.

Although in the 1950s some tentative steps were made towards the discovery of the rules governing the boundaries of harmonized groups of words they were not altogether successful. We still do not know exactly how the system operates beyond the word level. However, at the word level, Armstrong's discovery, modified by the recognition of the variants of *i* and *ii*, provides us with a symmetrical, dichotomous model which consists of ten "basic" vowel units (*i*, *e*, *a*, *o*, *u*, *ii*, *ee*, *aa*, *oo*, *uu*) with a pair of harmonic variants in each of them.

Armstrong's discovery, in its modified form, exercised strong influence on further research. The dichotomous model of the vowel system derived from her initial discovery was adopted by C.R.V. Bell, John Ibrahim Saeed, Muuse Xaaji Ismaaciil Galaal and myself⁶ and it also provided a starting point for the investigations carried out by Edda Farnetani and Giorgio R. Cardona.

It is possible that Armstrong's findings were of some help in the research undertaken by Somali scholars which led to the development of the Somali national orthography as finally implemented by the Somali Language Commission, since some of its members were acquainted with Armstrong's work. The Commission used the ten basic vowel units model but decided to ignore the distinction between their "fronting" and "retracting" variants since the contrasts between them are correlated with differences in meaning only in around a hundred roots and in some monosyllabic grammatical forms which rarely occur within the same syntactic context. Experience has now shown that it was a wise decision resulting in great typographical economy. The distinctions in meaning correlated with the contrasts between fronting and retracting vowels are not very important for the purposes of

practical communication since the context usually eliminates ambiguities.

In Somali lexicography, however, there could be no such reliance on the context and in the two most important and scholarly dictionaries of Somali provision is made to distinguish between the variants of the basic units when a difference in meaning results from such a distinction. In his *Qaamuskii Af-Soomaaliga Yaasiin Cismaan Keenadiid* marks the words in which the vowels belong to the fronting series by placing a superscript circle after the last letter of the word and leaving unmarked the words which have vowels of the retracting series. In the *Dizionario somalo-italiano*, edited by Agostini and others, a cedilla is placed under the first vowel of the word and has the same function as the superscript circle. The fact that only one mark is used for the whole word is possible only because the operation of vowel harmony is now known thanks to Armstrong's original discovery. The absence of such marking would reduce the accuracy of any dictionary of Somali.

It is interesting to note that the perception of the variants of basic vowels by persons whose mother tongue is Somali confirms Armstrong's dichotomy. In the introduction to his *Qaamuskii Af-Soomaaliga Yaasiin Cismaan Keenadiid* uses a metaphor taken from the kinaesthetic perception of weight-bearing by calling the fronting vowels "heavy" (**culus**) implying that the retracting ones are relatively light. This suggests that these two series of vowels differ in the tenseness of their articulation thus requiring different volumes of muscular energy.

It is a measure of Armstrong's meticulous care for detail that she gave much attention to the forms of the 3rd person masculine singular, independent past tense, which she called "short forms". They are archaic and occur mainly in poems and proverbs⁷ and they were not even noticed by any of the previous researchers. They always have fronting vowels, even if the other forms of the same verb have retracting vowels. The ubiquitous presence of frontness in them may give us some clues for a historical reconstruction of the origins of the dichotomy in the Somali vowel system.

When the "short forms" which end in a consonant are immediately followed by the conjunctions **oo** or **e** a junction vowel glide **y** occurs between them, a phenomenon not present when any other verbal forms are used, e.g.

Cabbaar aammus-y-oo feker-y-oo is yiri, waar tolow, maxaa suldaankii maantana kuu doonayaa?

"He became silent for a while and thought and said to himself, oh my dear,

what does the sultan want you for today?" (Muuse Xaaji Ismaaciil Gaalal 1954, p. 55.)

Malaa saacaddii baa dhowoo suurkii la afuuf-ye.

"Maybe the last hour is near and the trumpet has been sounded."
(Yaasiin Cismaan Keenadiid 1984, p. 181)

It is reasonable to conjecture that the frontness of these forms may be due to a suffix which disappeared in the course of history, but to confirm this one would have to undertake some comparative research in Somali dialects and related languages.

Discovery of the tonal system

Using minimal pairs in her discovery procedures, Armstrong found that in Somali tone functioned as the exponent of grammatical categories in addition to or instead of inflectional affixes. In the minimal pairs which she examined the differences in meaning occurred only if there was also a difference in the grammatical category of the juxtaposed words. This was a very unexpected discovery since in the best known tone languages, tones are very much used to differentiate otherwise homophonous lexical items. In Somali, lexical differentiation *never* occurs unless there is also a difference in the grammatical status of the words.

As in the case of vowel harmony Armstrong's discovery was not complete. Subsequent research totally confirmed her findings but showed that the role of tone was even more extensive than her examples indicated, since tonal patterns also form part of the case system, acting as exponents of case in nouns and noun phrases, either by themselves or together with inflectional affixes. Armstrong's initial analysis of the Somali tonal system has been largely corroborated and supplemented with some modifications in my own researches⁸ and those of Francesco Antinucci, Edda Farnetani, Larry M. Hyman, Annarita Puglielli and Ciise Moxamed Siyaad and John Ibrahim Saeed.

Armstrong's discovery throws some light on the use of indicator particles in Somali. As each grammatical form has its own fixed pattern the intonational contour of a sentence is determined by its components. Thus the intonation contours can be used only to a limited extent to convey types of meanings which are semantically suprasegmental in relation to individual words. It might then be argued that the indicators compensate for this limitation.

The knowledge of the correlation between tone and grammatical status of words has proved useful in lexicography. When the grammatical status of a word is shown in an entry it is possible to predict its tone pattern. There are many pairs of words with different meanings which, if tone is not marked, look homophonous, but the ambiguity is immediately removed if their grammatical status is indicated. Thus by providing each entry with some means of grammatical identification great typographical economy can be achieved since it allows the editors of dictionaries to dispense with tone marks, without lowering the standard of their accuracy.

The Somali national orthography has no provision for marking tones, on the correct assumption that the context usually eliminates the possibility of confusion in practical communication. There are, however, two areas of language use where tone marking is absolutely necessary to eliminate ambiguities. The first is in any discussion of grammar in a study situation, when isolated sentences in written form are used as illustrations and are thus deprived of any normal context. The second is in poetic texts where the extreme flexibility of word order and the use of allusive diction may present the reader with two or more possible meanings.

Postscript: A recommendation

I conclude my paper with a recommendation, which though of a digressive nature, is related to Armstrong's discovery of the tonal system in Somali. I would like to suggest to the linguists gathered here, and especially to the those in the Somali Academy and the National University, that they might introduce a unified tone marking system for Somali which could be used when the need arises. Such a system could have two versions, one for scholarly linguistic publications where typographic economy is not of primary importance and another for practical uses. In the scholarly version diacritics could be employed, as is the established custom in linguistics. In the practical version, however, it would be important to use other signs, easy to type and to print, and not requiring any keyboard adjustments, which tend to be expensive or even impracticable.

In this respect one could follow the example of the Somali scholars who invented a simple, but excellent, prosodic notation for representing the patterns of Somali scansion,⁹ consisting of figures placed under the text to represent time units. The same could be done for tone marking as can be seen from the examples below.

The tones assigned to the figures used in this notation are as follows:

A syllable followed by another syllable without a pause intervening		A syllable followed by a pause
1	High	Mid
10	High-Mid	High-Low
0	Mid	Low
X	Mid	Mid

shebeg kalluun galay 1 0 0 0 0 1	"a net into which a fish entered"
shebeg kalluun galay 1 0 0 10 0 1	"a fish which entered a net"
macallinkii walaalkay ammaanay 0 1 0 1 0 1 1 0 0 1	"the teacher who praised my brother"
macallinkii walaalkay ammaanay 0 1 0 1 0 0 10 0 0 1	"the teacher whom my brother praised"
biyo badan 0 1 0 1	"much water"
meel biyo badan 1 0 X 0 1	"a place which has much water"

For individual words or small portions of continuous texts the tone patterns could be indicated by placing the figures after each word or after those words which require elucidation, e.g.

- qaalin (1+0)** "a young he-camel"
- qaalin (0+1)** "a young she-camel"
- kooruu (0+10) noo keenay** "he brought us camel-bells"
- kooruu (1+10) noo keenay** "he brought us a saddle"

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NOTES

- 1 When an author and/or a publication are mentioned in the text of this paper full bibliographical details will be found in References.
- 2 Personal communication from Professor Vinay, dated 5.3.1989.
- 3 An assessment of Reinisch's contribution to Somali studies is provided in Andrzejewski 1987.
- 4 An account of her life and work is given in Meyer-Bahlburg 1988.
- 5 These developments are described in Robins 1967.
- 6 See bibliographical lists in Andrzejewski 1975 and Saeed 1987. In my publications on various aspects of grammar, information is also provided concerning the vowel system and tone and stress patterns (i.e. accentual patterns).
- 7 Forms of this paradigm occur very frequently in proverbs. In Kapchits's collection of over one thousand items about 5% of the main verbs are "short forms".
- 8 See Note 6.
- 9 A bibliography of publications in Somali in which this type of prosodic notation is used is found in Johnson 1978.