

Temperature System of Siyase and Ewe

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1. Introduction

Temperature phenomena are universal, easily perceptible by humans and basic in human categorisation (Wierzbicka 1996). Their conceptualization however, differs from language to language and involves a complex interplay between external reality, bodily experience and subjective evaluation. Temperature terms can therefore be characterized as both embodied and perspectival with regard to their meaning since rather than reflecting an objective image of the external world, they offer a naïve picture based on people's experience and rooted in their cultural practices. This paper is a comparative work on temperature terms in two Kwa languages in contact. Firsching (2009) notes that the linguistic aspects of the temperature domain have received very little attention apart from some few works which analyzed temperature terms in Baltic languages – Russian and Swedish. Taking inspiration from Firsching, who is currently working on Temperature terms in 15 African languages, the paper investigates the number of temperature terms (TTs hereafter) and the number of basic TTs in the two languages. It will also categorize these terms according to their semantic fields or domains and find out which of these domains are relevant for temperature evaluation in the two languages. The paper is structured as follows: Section 1 presents information on the literature on temperature systems as well as general information on Ewe and Siyase and Section 2 is the set up of data collection. Section 3 presents the findings and discussion whereas Section 4 concludes the paper.

1.1. General Information

1.1.1. Siyase: Genetic Classification

Siyase/Siya (Avatime) or Sideme is one of fourteen languages called Togo Remnant, Central Togo or preferably Ghana Togo Mountain (GTM) languages. There is some disagreement about the genetic classification of these languages. This is most likely due to the lack of information on the language, a situation which will hopefully be improved soon by several investigations of GTM languages which are currently taking place (van Putten, 2009, Defina 2010). Heine (1968) classified the languages into two subgroups with the Kwa sub-groups of Niger-Congo. He called these subgroups NA and KA and Siyase was classified as a KA language. Steward (1989) then suggested that the NA and KA groups were better analysed as belonging to two separate branches of the Kwa language family. He claimed that the NA languages belong to the Nyo branch while the KA languages belong to the left Bank branch. This would mean that Siyase is more closely related to some non-GTM languages such as Ewe than it is to other GTM languages in the NA group. Williamson and Blench (2000) then suggested that the NA and KA groups branch out from proto-Kwa, in which case all GTM languages would be relatively equally related to non-GTM languages. Blench (2001) goes further claiming that due to the difficulties encountered when trying to relate GTM languages to Kwa languages, it is better to treat them as a typological group consisting of four genetic clusters coming from Niger-Congo. Kropp Dakubu (2008) argues that GTM languages do form a genetic group, consisting of the subgroups KA and NA, as Heine originally proposed. In her classification, the GTM languages are most closely related to the Tano languages (which include Bia, Akan and Guang). Whatever turns out to be the best classification for GTM languages, it is clear that Siyase is most closely related to its neighbouring languages, Tafi and Nyangbo – a fact recognized by all previous researchers.

Siyase is spoken in the Volta Region, south-east of Ghana in eight villages: Amedzofe, Biakpa, Dzogbefeme, Fume, Gbadzeme, New Dzokpe, Old Dzokpe and Vane. The most recent estimates of the number of Siyase speakers is likely to be around 10,000 (van Putten 2009, Defina 2009).

1.1.2. Some typological features of Siyase¹

Siyase is a tone language with three distinctive level tones, which are mainly used to make lexical contrasts, but also function in the grammatical domain. It has an advanced tongue root-based vowel harmony system. On the syntactic front, Siyase retains a morpho-syntactically robust noun class system. It has seven noun classes, six of which consist of singular and plural pairs. The various noun classes are marked by prefixes on the noun (Schuh 1995b). There is concord marking on several types of modifiers and on the verb if the noun is its subject. Mood and Aspect are marked by prefixes on the verb; there is no grammatical tense marking.

Grammatical relations are primarily indicated by word order, which is SVO. This is supplemented by subject agreement on the verb but this is largely redundant unless there is no overt subject.

Siyase is a pro-drop language and, unless the subject is being emphasized, a known subject will be referred to only by the subject agreement on the verb (Defina 2009: 14).

Siyase like many languages of the region, has serial verb constructions (see Ford 1971a, van Putten 2009 for more information on these). In some cases, there is a vowel which precedes the second verb of a serial verb construction and it varies according to the subject and TAM marking of the first verb. (See van Putten 2009, for more information regarding these vowels).

Siyase has postpositions and one general locative prepositions *ní* which must also be used whenever a postposition is used.

Possession is indicated by adjacency. The possessor precedes the possessed. With body parts and kin terms, the possessor pronoun is fused with the possessee.

There are several clause coordinators. Unfortunately, their function has not been researched into yet and they remain a topic for future study.

There are two complementizers: *sì* is used to introduce a subordinate clause, and *gì* is used to introduce relative clauses as well as some other subordinate clauses.

There is a group of verbs, the copulas and positionals which only occur in the aorist. In all other aspect and mood categories they are replaced by the general copula verb *zè*. These verbs are the locative copula *lí* ‘be at’, the equative copular *nu* ‘be’ and the positional verbs *dí* ‘sit’, *kpàsî* ‘be in’ *tìnî* ‘be on’ and *sūnū* ‘hang’. Ewe has a similar distinction between a present and past form of the ‘be at’ copular ‘lè/nò. The Siyase pattern is slightly different though because the *zè* copula is used to replace many verbs and the distinction is not purely one of tense. The *zè* verb is used to refer to present situations which are not in the aorist. Consider example (1a) (example 10 of Defina 2009).

Also, with the exception of *lí* ‘be at’ which seems to have a present tense specification, all the verbs which it replaces can be used to refer to past situations, for instance in example (1b) (example 11 of Defina 2009).

- | | |
|---------------------------------------|-------------------------------------|
| 1. a. è - é ze ní ɔvanò. | b. kù – ní – ó ku - kpasi. |
| CM: 1SG PROG be LOC Vane | C5S –water – DEF C5S –be. in |
| ‘He is still in Vane.’ | ní ó - kpəkpe - ye |
| | LOC C1S black DEF |
| | ‘There was water in the black one.’ |

¹ Information on Siyase typological features draws extensively on Defina (2009) and van Putten (2009).

Verbs can be nominalised by reduplicating the verb stem. All de-verbal nouns are placed in Class 5 (see example (2); example 12 of Defina 2009).

2. ku – ɲwlimì – ɲwlimì
 C5S – write - REDUP
 ‘writing’

Like many languages of the region, Siyase has ideophones. They are found in all the open word classes: nouns, adjectives, adverbs and verbs. For example: *ɔ-kúkú* ‘chicken’, *dzódzɔ* ‘tall’, *riɖi* (ɖiɖiɖi) ‘repeatedly’ and *srā* (srā) ‘smear’. With ideophones, reduplication indicates intensification rather than nominalisation; for instance *srāsra* ‘smear a lot’ still functions as a verb rather than a noun.

1.2. Ewe²

Ewe, on the other hand, is a major dialect cluster of Gbe or Tadoid (Capo 1991, Duthie 1996) spoken by about 3 million people in the south eastern part of the Volta Region of Ghana across to parts of southern Togo, as far as just across the Togo-Benin border. Ewe also belongs to the Kwa family of the Niger Congo. It is bordered to the west by Ga-Dangme and Akan, to the north by the GTM languages, for example Sɔwu, Likpe, etc. and some Gur languages such as Kabiye. To the east are the Gbe dialects – Gen, Aja and Xwla – all of which have degrees of intelligibility with Ewe (Kluge 2000, cited in Ameka and Dovlo 2009). Ewe is also used as a second language in the GTM communities (Ring 1981). It is studied as a subject at all levels of education in Ghana up to the tertiary level. The area where Ewe is spoken is in the tropics. Temperatures therefore vary depending on the seasons of the year.

1.2.1. Some typological features of Ewe

Ewe is a tone language with high and non-high tonemes. Complex rising and falling tones also occur. Morphologically, Ewe is isolating with agglutinative features. It makes use of compounding as well as reduplication, triplication and affixation processes in the formation of new words.

Nouns have a non-high vocalic prefixes *à* or *–è* which are relics of proto Niger Congo noun class markers. The *è* prefix tends to be elided when the noun is not said in isolation, e.g., the contrast between *à-me* ‘prefix-person’ and (*è-*) *gli* ‘prefix-folktale’. Some Temporal nouns have a High tone prefix and they are never elided, *égbé* ‘today’, *éto* ‘tonite’ and *ázɔ* ‘now’ (Ameka and Dovlo 2009).

In Ewe, who does what to whom is expressed by constituent order where the doer comes first followed by what is done (the verb), followed by the one to whom it is done (the object). This can be followed by a recipient action. It is therefore an SVO language.

Ewe is an aspect-prominent rather than tense-prominent language. Habitual aspect is marked on the verb by a toneless suffix (n) *a* which inherits its tones from the preceding syllable. Preverbal markers such as *vá* ‘ventive, eventually’ express various modal and aspectual categories.

A bare verb or the aorist form has a past semantics. For active verbs, it indicates the prior occurrence of the change of state hence the state is current. Ewe has a potential morpheme *a-* which can have future time interpretation in context. All these temporal interpretations can be reinforced by adverbials.

Ewe is also a verb-serialising language. This is a mono-clausal construction in which a series of finite verbs occur without any connector indicating syntactic dependence. However, in some serial verb constructions, serializing connectives may be used to link the verbs: *hé* for instance is used for simultaneous or sequential relations and *dá* for purpose relations. All the verbs have the same subject, which is expressed only once, and each verb can occur with its own complements and adverbial modifiers.

A closed class of postpositions and prepositions exist in Ewe. Postpositions evolved historically and mostly from body part nouns but now constitute a distinct form class which is not necessarily a

² The paper is based on the variety of Ewe spoken in Ghana.

subclass of the nominal class. Prepositions also constitute a small closed class of less than ten elements, which have grammaticalised from verbs. They are distinguished from verbs by the fact that they cannot occur with the habitual suffix *-ná*.

The language also has a logophoric pronoun $y(\acute{e})$ which is used in reportive contexts to designate the individual(s) (except for the first person) whose speech, thoughts, feelings and so on are reported or reflected in the linguistic context. It occurs in grammatical or discourse dependent contexts in clauses introduced by the dependent-class introducer *bé (ná)* ‘SAY, that’ (cf. Clement 1979, Essegbey 1994).

Just like Siyase, Ewe has ideophones, a set of words with interesting phonological and syntactic properties some of which encode intensity, manner of movement, etc.

1.3. Summary

Comparing the typological features of Siyase and Ewe, we can say that indeed, while Siyase displays a robust noun class system with intricate property, Ewe shows only a very few residual noun class system. Other syntactic similarities and differences do exist. With the two languages being in contact, and both being Kwa languages, one would expect that they would have some similar typological features. It is claimed that temperature phenomena are universal in all languages since all humans experience temperature in their bodies. It has been attested in the literature that the expression of the temperature phenomena is deeply rooted in the experience of the people’s cultural and physical environment. The next section looks at how data was collected for the analysis of the temperature systems of both languages.

2. Methodology

2.1. Participants and data Collection Procedure

Relevant guidelines for collecting linguistic expressions for temperature concept, (version Koptjevskaja-Tamm (2007) was used to elicit information on temperature terms during focus group discussions.

The sampling model used to recruit participants was purposive. The data collection took place in both Ewe and Siyase communities. Each group consisted of 6 participants whose ages range between 30 and 72. The youngest in the Ewe group was 30 and that of Siyase was 35.

Upon oral agreement to participate in the study, the speakers had focus group discussions on Siya and Ewe everyday temperature expressions. Each group was facilitated by a member of the group (fluent in English and Siyase/English and Ewe). A focus group protocol originally prepared in English (by the researcher) and translated by one Siya and one Ewe speaker respectively was provided to facilitate the discussion.

2.1.1. Translations

The data were processed using three steps. First, each group gave out all the temperature expressions in their language that they could come up with and provided their approximate translations for the facilitators to write down. Second, the various properties, including the exact meaning and use were elicited going through each of the sub-domains, tactile, non-tactile and personal feeling temperature. Tactile temperature refers to “touch temperature.” Human beings normally evaluate tactile temperatures of entities by touching them with various parts of their bodies; e.g. with their feet while walking or standing on them, or with their hands while holding or just touching them (saucepan on stove), or with their mouth while eating them (soup). There are, however, more sophisticated methods of temperature evaluation (thermometers etc.) which involve an elaboration of touching methodology.

Non-tactile temperatures, on the other hand, refer to evaluation of particular circumstance (primarily a certain place at a certain time) or of entities, by human beings with respect to whether they make them feel warm, cold etc. This applies first of all to the temperature in a certain environment, either outdoors or indoors. Personal feeling temperature is experienter-based. It is a subjective experience, caused by external or internal conditions (e.g. I am feeling warm because the windows and doors (of the room where I am sleeping) are closed or because I am feeling cold (because I am having a fever), or by a combination of both. Third, the basic TTs were also identified. Human languages tend to

have basic terms which are distinguished from non-basic ones in psychological, social and linguistic respects. Taylor (1989:49), Kittay (1991:232) and Sutrop (1998) note that in particular, they (1) are salient, that is they spring to mind immediately; (2) are widely known throughout the whole speech community; (3) have their meaning generally agreed upon; (4) are morphologically simple and tend not to be polylexemic; (5) are native or nativised; (6) are primarily used for this domain; but (7) within this domain, they are not too restricted in their application. Finally, the ranges as well as the syntactic realisations of the terms were also examined.

3. Findings and Discussion

3.1. Temperature Expressions in Siya and Ewe: a comparative perspective

Work done so far on 15 African languages suggests that every language has at least two basic temperature terms; one of them describes low temperature, the other one, high temperature (Firsching 2009). Languages with two or three basic TTs are organised according to patterns. These are (a) low-high-very high; (b) low-low-high or (c) low-high-high systems and if terms for extreme temperatures are used in the language, they are likely to describe extremely high and not extremely low temperature. Finally, if a language has more than one TTs to describe low temperature, the terms are likely to be applied in different semantic fields and if a language has more than one TTs to describe high temperature, the terms might differ in their semantic fields as well as in their position on the temperature scale. How relevant are these findings to Siyase and Ewe?

Siyase and Ewe possess a wide range of lexemes in the semantic field of temperature. However, in both languages, there is no equivalent for the term ‘temperature.’ Hence, speakers use expressions connected with the way we experience the air or wind around us to define the concept.³ The following Tables show the main TTs in both languages with their English equivalents and their relation to warming/neutral/cooling temperature perception as well as their relevant domains. The ensuing discussion will elucidate the number of TTs in the two languages and which of these terms qualify to be basic ones.

Table 1. Temperature words in Ewe

Ewe	English gloss	Domains
fã	to become cold, cool	body, object, food, ambient temperature; also used in emotion and social ambience
àvùvò	cold(n)	Atmospheric
gblò	lukewarm	water only
yrò	lukewarm; to wither	medicinal herbs (to apply heat to herbs to soften them for the extraction of the fluid)
hìhà	to heat/warm;	food; medicinal herbs held over fire to soften them for the extraction of the fluid
líá	to heat	food (corn dumpling only)
xò dzò (v) xòdzò (adj.)	to become hot hot	body; object, food ambient temperature
vù dzò	to radiate heat	body (personal feeling)
vé	to become painfully hot	experiential; used only for temperature with respect to water; but used in other domains; taste; bodily sensations, emotion etc.
fiè	to boil	used for medicinal purposes i.e. sterilizing; the state of water needed for preparing certain foods; for bathing corpses ⁴
ylè	to become red/white/fury hot	blacksmithing (forging iron)
(à)ffíá	sweat	Atmospheric

³ The nominalised form of the terms related to ‘hot’ kùhùhù ‘warmth’ and dzòxòxò are what speakers offered as translation of ‘temperature’.

⁴ In the olden days when there were no morgues, traditionally, water for bathing corpses would have to boil first before it is diluted to lukewarm state. It is therefore a taboo for living humans to allow the water they intend bathing with to boil. Should the water boil, cold water is added to stop it from boiling before it is poured off.

Table 2: Temperature words in Siyase

Siyase	English gloss	Domains
yó	to become cold, cool	body, object, food, ambient temperature; also extended to emotion and social ambience
ɲlini	cold (adj.)	food, extended to emotion
gblò	lukewarm	water only
hihà	to heat warm	food; hold medicinal herbs over fire to soften them for the extraction of the fluid
hùhù	to become warm	personal feeling
kpíkpí	to become hot/hot	body, object, food, ambient temperature
béfù/zífù/ kìfùìè/fù	to become hot/warm, hot (fire) hot	body, object, food, ambient temperature; applied widely for hot temperature
bé	to become painfully hot	Water
fí	to boil	water, soup
só	to radiate heat	pepper, personal feeling

Out of the TTs listed above, two TTs, *yó* ‘to become cold, cool’, (Siyase) and *fa* ‘to become cold, cool’ Ewe, qualify as basic TTs in the sense used in Sutrop (1998) and Plank (2003): they are (i) native, not borrowed or derived, (ii) morphologically simple and salient and known to the speech community and are not restricted in their application among others as the following Siya and Ewe examples respectively show.

3. a. Àwó í - klí lè i - yó.
Awo CM-foot- PL AGR - become cold
‘Awo’s feet are cold.’
- b. Kù - nī ò é - yó.
CM: water DEF 3SG – become cold, cool (Siyase)
‘The water is cold/cool.’
- c. È – lésí - là é - yó.
CM- night – DEF 3SG - become cold/cool
‘The night is cold.’
- d. Kane – me – ké - yó
air inside AGR become cold/cool
‘The air is cold.’
4. a. Nyě àsí – wó fá.
1SG hand PL become cold
‘My hands are cold.’
- b. Àkàtsá – á fá.
pulp DEF become cold
‘The pulp is cold.’
- c. Yà - à - mè fá.
air - DEF inside become cold
‘The air is cold.’ (Ewe)

Yó and *fá* can also be extended to emotion and disposition as well as social ambience. Examples (5), (6) and (9) illustrate this.

5. ð - kɛ yè ì - súàmè.

CM – father 1SG:POSS CM - body

‘His father has lost interest in him.’ (Lit: His father’s body is cold towards him).

6. a. Bló klò é - yó.

1PL environs 3SG become cold, cool

‘There is no bad news.’

The opposite of this is

- b. Bló – klò bé – fú.

1PL environs AGR become hot

‘There is bad news at our place.’ (Lit: As for our place there is bad news). (Siyase)

7. a. Ná míáfé tó mè ná fá.

Give:IMP 1PL-POSS ear – inside SUBJV - cold

‘Let us have our peace.’ (Lit: Let the inside of our ears be cold, cool). (Ewe)

- b. Mía gbó fá.

1PL environs become cool, cold

‘There is no bad news at our place.’ (Ewe)

The opposite of this is

- c. Mía gbó dzè/xò dzò.

1PL environs contact/get fire

‘There is no news at our place.’ (Ewe)

From the foregone discussion, it is obvious that Ewe and Siyase have basic TTs for low temperature. Firsching (2009) suggests that Ewe has another basic TT *xòdzò* ‘hot’/*xò dzò* ‘to become hot’. These word(s) are not acceptable since *xò dzo/xòdzo* are derived basically from ‘fire.’ The predicate expressions for ‘hot’ are morphologically compositional. This works against their basic status. The word for hot in Siyase is also based on the word for ‘fire’ *kifuiè/fú*. This partially supports the suggestion by Gooddard and Wierzbicka (2007) that the semantics of ‘hot’ words are linked to a ‘fire’ prototype.

Siyase, however, seems to have a basic TT for high temperature. *Kpikpi* ‘hot’, to become hot’ satisfies the parameters set up by Taylor (1989), Kittay (1991) and Sutrop (1998). *Kpikpi* is however polylexemic. The term is an adjective which appears to be a reduplication of the stem *kpi*. In Siyase, several adjectives are derived from verbs as the following examples from Adjei (2007:131) show.

8. kpá ‘to dry’ kpákpá ‘dried’

blé ‘to unite’ bléblé ‘loose’

tó ‘to cook’ tótó ‘cooked’

In the Siya language, however, there are monomorphemic lexemes that have reduplicated forms but their source cannot be reconstructed with any certainty. For example, the adjectives *plúplú* ‘empty’, *klùklù* ‘dirty’, *kpórókpóró* ‘round’ could have underlying verbs *plú*, *klù* or *kpóró*⁵ basing the argument on rules of verbal reduplication. *Kpikpi* phonologically looks like it is derived from *kpi*. The reduplicated structure *kpi* therefore could be related to *kpi* but for which the root is not clear. The picture that emerges is that there is no clear derivational source for *kpi*; hence, it qualifies as a basic TT. The following examples show the domains in which *kpi* is used.

⁵ Speakers interviewed say Siyase does not have such verbs (Adjei 2007:135).

- e. Kù ní - ó kù - fí.
CM-water- DEF AGR boil
'The water has boiled.'

Ewe

13. a. Tsì - á fá.
Water-DEF become cold/cool
'The water is cold/cool.'
- b. Tsì - a gblò.
water-DEF become lukewarm
'The water is lukewarm.'
- c. Tsì á xò/dzè dzò.
water-DEF get/contact fire
'The water is hot.'
- d. Tsì - á vé.⁶
water - DEF become painfully hot
'The water is (painfully) hot.'
- e. Tsì - á fìè.
water - DEF boil
'The water has boiled.'

The data also reveals that verbal expressions that denote temperature are restricted to experience-based domains, whereas temperate nouns are typically associated with expressions that refer to thermal comfort or non-tactile temperature in Siyase as in:

14. Má zī kífùè.
1SG feel fire
'I feel hot.'

The subjective or affective experience must be expressed with coldness/hotness as the transitive agent acting upon the experiencer in Ewe.

15. a. Àvùvò lé - m̄.
Cold(n) hold/catch 1SG
'I feel cold.'
- b. Àffíá té - m̄.
sweat sting - 1SG
'I am sweating./I feel warm.'

This can also be expressed in Siyase as:

16. Kù - blò kú ónùvè.
CM - cold feel child
'The child is feeling cold.'

Words that are used to describe the effect of the weather on the body do not define temperature themselves but imply some conclusions about them. For instance, in the following Ewe words, *ɣdɔ* 'sun' stands for hot temperature. It must be noted that while the nouns *àvùvò* 'cold(n)' and *kùblò* 'cold(n)' in Ewe and Siyase respectively are their own reference, there is no noun to express the notion of 'HEAT'. 'Heat' is always expressed by employing two references: 'Fire'⁷ and 'Sun'. There are no impersonal constructions in both languages hence the need for an explicate subject which is always the 'sun' and 'fire' when expressing heat.

⁶ The primary source of vé and bé is 'become painful'.

⁷ Fire can also be extended to certain temperature domains which will have metaphorical interpretations. This is beyond the scope of this paper.

17. a. ŋdʒ lè ŋúí vé - mí.
Sun be-PRES skin pain - PROG
'The weather is hot.' (Lit: The sun is heating/paining the skin.)

b. ŋdʒ lè vù - vù.
sun be-PRES RED open/radiate
'It is hot.' (Lit: The sun is radiating (heat)/opening (heat/burning).)

Temperature is also highly related to conception of illness, and the balance between 'hot' and 'cold' is crucial for the well-being of the body of the individual (and also for his or her cycle). The importance is actually reflected in the temperature lexicon. *Avùvɔ, xɔdzɔ* (Ewe), *kùblɔ* and *kúhùhù* (Siyase) are used to designate illness or uncomfortable states. The TTs 'hot' and 'cold' refer to fever whenever it affects persons. Depending on the context, an individual or a child who is feeling cold can have fever. The child can be said to be feverish when the body is hot, the result of fever being that the body is warm.

18. a. ʒèví á fé ŋúí/ŋúí xɔ/dzè dzò.
Child -DEF POSS skin get/contact fire
'The child is hot/running temperature/or the child has fever.' (Ewe).

b. Mà gbònì ò - nūvó éé kè - túà ké béfú.
1SG touch CM child DEF CM-head AGR become hot
'I touched the kid's forehead; it was warm/hot; the child has fever .' (Siyase)

3.3. Syntactic realizations of the terms

In this section, I will briefly present a summary of the choices made in Ewe and Siyase among the various syntactic constructions they have for the expression of temperature – predication, modification and reference sometimes relating them to different kinds of temperature (tactile, non-tactile- weather, time, day, personal feeling temperature).

The TTs in Siyase and Ewe can belong to different word classes even within one and the same language and can occur in various constructions. Also, various productive processes are used for deriving TTs. Word classes that describe TTs in both languages are mainly verbs, and to a lesser extent adjectives and nouns. The domains of 'hot' and 'cold' temperatures are expressed by main roots such as *fá* 'to become cold' *xɔdzɔ* 'hot' (in Ewe) and *yɔ* 'to become cold', *ɣlìnì* 'cold', *kpíkpi* 'to become hot/hot' (in Siyase). These roots are reduplicated to derive TTs which are adjectives. For example, the intransitive verb *fá* can be reduplicated to form an adjectival and this adjectival can be further marked with the diminutive in Ewe.

19. fa → fa - fa - i = fafe
cold RED cold DIM cool
'pleasantly cool/cold.'

Other adjectives that can be derived from the temperature verbs *fìè* 'to boil' and *vé* 'to be painfully hot' (Ewe) are *fèfìè* 'boiled' and *vévé* 'very hot'. In Siyase, *yɔ* 'to become cold' can also be reduplicated to become an adjective. For example, *yɔyɔ*, 'cool/cold', as in *kùnító yɔyɔ* 'cold water' *ɣlìnì* 'cold/cool' is an adjective but it can be reduplicated to express intensity. See examples (20a-b)

20. a. Kí me kù - ní - ó ñlìnì. b. Kù - ní - ó é - yó ñlinínì.
Give 1SG CM-water –DEF cold CM-water – DEF 3SG become very cold
'Give me (some) cold water.' 'The water is very cold.'

Another derivational process used by Siyase is the prefixing of *kú* (class marker) to verbs or adjectives to form nouns. This is possible because Siyase operates a noun class system. The adjectives *yóyó* 'cold/cool' and *hùhù* 'to become warm/hot' can be turned into nouns by attaching the noun prefix *kú-* to the roots. Examples (21a-b) exemplify this:

21. a. Kífùè lí hùhù. b. Kùsà kùzé kí bá - nùá kú –hùhù.
Fire AGR become hot cloth reserve for CM:PL person CM-warm
'Fire is hot.' 'Cloth is reserved for people's warmth.'

In Ewe, the neutral temperature word for denoting the concept of 'lukewarm' (applicable to only water) *gblò* (a term borrowed by Siyase) can also be reduplicated to form an adjective as the examples in (22c) show.

22. a. Gblò tsì ná - m má lè. b. Tsì - á gblò.
Warm water DAT – 3SG 3SG bath water-DEF become lukewarm
'Heat/Warm water for me to bath.' 'The water is lukewarm.'
- c. Nò tsì gbògbò.
drink water RED lukewarm
'Drink lukewarm water.' (Ewe)

Siyase also uses the same process.

23. Ìjòe kù – ní - ó gblògbò.
Drink:IMP CM-water DEF RED lukewarm
'Drink lukewarm water.'

Other TTs found in Ewe but not in Siyase are *yrò* 'to become lukewarm/heated' and *líá* 'to warm/heat (food)'. *Yrò* in certain contexts applies to leaves which are held over fire to make them soft for the extraction of fluid or to soften for grinding. Both *yrò* and *líá* can be reduplicated to form adjectives (see examples (24-25)).

Líá is similar to *hìhà* but with *líá* the food *akple* (dumpling of maize) is dropped in the soup to warm the *akple*. *Líá* can be reduplicated to form TTs which are adjectives but *hìhà* cannot be reduplicated. Examples are given in (25) below.

24. a. Yrò àmà á lè dzò nũ b. Gbè yò-yrò - á bòbò
Heat herb/leaf DEF be. LOC fire mouth grass RED wither DEF RED soft
'Apply heat to the herb/leaves.' 'The heated/withered leaves are soft.'
- c. Tsì – á yrò.
water DEF become lukewarm
'The water is lukewarm.'
25. a. Líá àkplé - á ná - m.
Heat/warm àkplé - DEF DAT 3SG
'Heat the akple for me.'

- b. Àkplé lá – líá lè dzò – dó - fé .
 àkplé RED – heat/warm be.LOC fire – set - place
 ‘The heated akple is in the kitchen.’

4. Conclusion

This paper is a survey of TTs that exist in Siyase and Ewe, two Kwa languages in contact. The paper notes that the meanings of TTs, their everyday use as well as some syntactic and semantic properties, and domains are similar. Temperature attributes in both languages are chosen relatively to several temperature parameters that are important and salient for humans. The temperature terms are distinguished by simple procedures relating to the human body and have only very approximate physical correlates (Koptejevskaja-Tamm and Rakhilina 2007:20). Siyase has two basic TTs while Ewe has one, a finding that questions Firsching's (2009) suggestion that African languages have at least two basic TTs. Strictly speaking, Ewe has only *fá* ‘to become cold’ as a basic TT. The TT *xò/dzè dzò* ‘to become hot’ or *xòdzò* ‘hot/heated/warm’ are complex expressions involving Verb and Noun collocations, but which are based on the word ‘fire.’ Since the term is derived, it does not meet the condition that basic TTs must not be derived terms.

However, Firsching's suggestion that if a language has more than one TT to describe high temperature, the terms might differ in their semantic fields as well as their position on the temperature scale, holds true for Ewe. *Vé* ‘painfully hot’, *fìè* ‘to boil’ for example, are associated with water while *ylè* ‘to become red-hot/white or fury hot’ is associated with metals which are heated and have become red-hot. *Ylè* will be at the far end of the cline, coming after *vé* and *fìè*.

One striking difference is the use of *vù dzò* ‘to radiate heat’ in Ewe. The verb covers a wide range of temperature and have pronounced negative connotation; it refers to temperature which is definitely ‘too hot’ and causes feelings of discomfort and can be described as spreading the strong heat of the sun, fire (or even pepper) and thus weakening and exhausting human beings. Siyase also has *só kifuiè* ‘to radiate heat’ but does not have a TT for ‘fury hot’. The findings suggest that the two languages seem to have shared temperature expressions and this is likely due to shared environment, borrowing and shared genetic history.

Appendix

Focus Group Protocol

What can we say about the air that is blowing around us right now? Let's talk about what we feel.

Mention all the expressions that we can use to describe temperature when we observe, experience or touch the following:

Food: (rice, maize, yam, porridge, immediately after preparing it).

Liquids: water when put on fire

water for bathing

tea (after ½ hour) tea ½ hour a removed from fire after

palm wine tapped during the harmattan season

Environment: rooms of thatched mud houses and houses built with aluminium roofing sheets; rooms without ceiling

Shade: arena where the community meets.

Household: fire in the kitchen and the blacksmith's shop.

Weather/Climate: a sunny day; weather during the wet, dry or harmattan season.

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