SOME POINTS IN SAHO AND IN TIGRINYA PHI-FEATURES

4.1 *Introduction*

Tigrinya is a Semitic language spoken in Eritrea and Ethiopia. Saho is a Cushitic language spoken mainly in the Red Sea region of Eritrea and partly in the Tigray region of Ethiopia. Both Tigrinya and Saho belong to Afro-Asiatic language family. The archaic features which occur in both of them can be Afro-Asiatic features. These languages have person and number morphemes which occur in independent pronouns and in verbs. Moreover, Tigrinya independent pronouns and verb stems have also morphemes which mark gender.

The element n which occurs attached to affixes, as in the case of n in Aramaic *t…ūn* (2mpl) and *t...ān* (2fpl), is regarded as a North West Semitic innovation by some scholars and as a dialect continuum for others. In Afro-Asiatic languages, however, plurality can be indicated by n as in Akkadian *ʔanti > ʔatti* 'you (2fs)' versus *ʔantinā > ʔattinā* 'you (2fpl)', Bedja *ba-rūk* 'you (2ms)' versus *ba-rā-kn-a* 'you (2mpl)', Tigrinya *ʔanti* 'you (2ms)' versus *ʔantɨn* 'you (2fpl)' or *ʔɨn* (< *hn*) as in Tigrinya and Amharic *ʔɨnnä bɨnyam* 'Binyam and others'.

The morpheme *t* is assumed to be the Proto-Semitic second person subject marking morpheme. On the other hand, second person is marked by *k* or *t* in Afro-Asiatic languages.

In the literature, it is indicated that third person is featurally unmarked (cf. Sauerland 2008: 57). According to Harley (2008: 271), third person forms are regarded as demonstratives and pattern with nouns (not with the person pronouns). First and second person morphemes play a pioneering role in the grammaticalization of agreement markers across languages (cf. Fuß 2005).

Further research on gender, number and person markers may help in bettering the understanding of the morphemes of the languages in question. Due to time and space limitations, however, this chapter focuses on number, gender and second person morphemes in Saho and in Tigrinya. This chapter deals with currently used data from Saho and from Tigrinya.

However, data from ancient related languages can be used as long as they are useful for the betterment of the analysis of the features in question.

The chapter is organized as follows. In section 4.2, an attempt is made to give an introduction to the framework used in this article. In section 4.3, we have an overview of some person, gender and number morphemes in Afro-Asiatic languages. In section 4.4 an overview of Saho and Tigrinya Phi-features is given. In section 4.5, Phi-features and second person independent subject pronouns of the two languages in question are briefly discussed. Sections 4.6-4.6.1.8 deal with the Saho and Tigrinya perfective and imperfective verbal stems and the Phi-features which occur attached to the verbal stems. Sections 4.7-4.7.2 concern the relationship among the Phi-features in related languages. Section 4.7.3 tries to see the possible role of the Phi-features in the classification of Semitic languages. Section 4.8 discusses the development of Phi-features. Sections 4.9-4.9.2 deal with the structure of Phi-features while section 4.10 concerns syncretism in the Phi-features of the languages in question. Finally a conclusion is given in section 4.11.

In the literature, it is indicated that the emergent Phi-Theory is at its early stage (cf. Adger and Harbour 2008: 27). I believe the work in this chapter is far from being complete.

However, the data together with questions raised and to be raised in this article and from this article may have their own modest contributions to the development of the emerging theory in question.

4.2 Background

Person, number and gender features go under the general name of Phi-features. Person, number and gender are typical Phi-features. However, features which involve in honorification and definiteness, though not included in this article, may also fall within this definition. We can refer to the class of such features as Φ, and to the individual features that make up this class as φ-features. As in any emerging theory, however, the precise definition of φ-features are expected to emerge after much more work (cf. Adger and Harbour 2008: 2). Fuß (2005: 211) argues that in Mongolian SOV languages like present day Buryat, agreement suffixes originated from a marked word order option in which weak unstressed pronouns followed the finite verbs, while additional full forms could be added in preverbal positions probably for emphasis. Fuß assumes that in the course of time, the unstressed/clitic pronouns were reanalysed as verbal agreement suffixes while the preverbal pronouns turned into the 'true' subject of the clause. According to Mavrogiorgos (2010: 2), the clitic moves to

the left edge of v*/T and incorporates into it to form a proclitic. Further-more, Fuß (2005) argues that the verb is contained within TP which can either remain in situ or move to T. Fuß assumes OV-languages allow the verbs to stay in situ. In these languages, the verbs can combine with the agreement morpheme on T via morphological Merger at MS. This is due to the fact that in a strict OV grammar, the verb is string-adjacent to the set of right inflectional heads. According to Fuß (2005: 213-4), this al-ternative appears to be more economical than the derivation involving verb movement. Taking examples from French and English, Lasnik and Uriagereka (2005: 75-6) assume that a checking relation is needed even though the details can be left for further research.

In the framework adopted in this article (cf. Fuß 2005; Harbour 2008 among others), inflected words are built in the syntactic and/or morpho-logical component and later realized by the insertion of phonological ex-ponents. Thus, an inflected verb can only be spelled-out if it is combined with its inflectional affixes prior to Vocabulary insertion. This morphologi-cal requirement must be satisfied prior to PF. Many scholars assume that this can be accomplished by overt head movement to higher functional head or at MS (morphological structure) by Morphological Merger which combines the verb root with its inflectional morphemes post-syntactically under structural adjacency which can be related to the apparent syntactic lowering or affix hopping as in the case of finite verbs in English (cf. Halle and Marantz 1993; Baker 2002; Fuß 2005; Harbour 2008 among others).

In languages like Tigrinya, the verb root is composed of consonants we call radicals. Different vocalic patterns are inserted into the verb root to form verbal stems indicating aspect and mood. The Phi-features are affixed to the verb stems indicating aspect and mood (cf. also Tesfay Te-wolde 2002; Arad 2005).

According to Pfau (2009), little x (in which x can be the verbal little v, the nominal little n, or adjectival little a) determines the edge of a cyclic domain at which a derivation is shipped off to PF and LF.

As indicated in Fuß (2005: 34-5), most researchers agree there is a universal inventory of core functional categories which consists of the el-ements C (clause type, subordination), T (tense, subject-verb agreement, nominative assignment), v (voice, transitivity, accusative assignment, ob-ject agreement) and D (nominal inflection, definiteness).

Fuß (2005: 35) says: "Strictly speaking, there is no such thing as 'syn-tactic change'". Fuß also argues, apparent "syntactic change" and syn-chronic differences in different languages result from changes which affect the feature content of functional categories like C, T, v and D via phonological erosion, grammaticalization etc.

A set of morphological operations may apply to the output of the syntactic component prior to Vocabulary insertion which result in the

change of the content and hierarchical structure of the morphemes. The most important of these, according to Fuß, are the insertion of the so-called dissociated morphemes, Fusion, Fission and impoverishment. The constituent structure of morphemes derived in the syntax can be modified by the post-syntactic insertion of "dissociated" morphemes. These "dissociated" functional morphemes may attach to other functional morphemes. As indicated in the literature, (cf. Fuß 2005 among others), they are called dissociated because they are not present in the syntactic derivation and only reflect properties expressed by structural configurations in the syntax proper. In Distributed Morphology (DM), this mechanism is commonly used to account for case and agreement phenomena. For instance, subject-verb agreement is analysed in terms of the post-syntactic adjunction of an Agr morpheme to T.

Furthermore, we can see in the literature that fusion leads to the amalgamation of two separate syntactic terminals, while in the case of fission, a single syntactic terminal node is realized by more than one vocabulary items. Fusion creates a mismatch between the number of underlying morphemes and the number of inserted vocabulary items in that two or more syntactic nodes are fused into a single terminal node which is then realized by a single phonological exponent. In English, for instance, Fuß (2005) argues Agr and T fuse into a single morpheme prior to Vocabulary insertion.

The concept of fusion is related to the notion of the insertion of Vocabulary items in that they discharge the inflectional features present in the morpheme. In standard cases, the insertion procedure stops after a phonological exponent is inserted. This happens even if the exponent discharges only a subset of the inflectional features present in the morpheme. If a morpheme is marked for undergoing fission, however, the inflectional morphemes that are not discharged by the first insertion operation are copied into an additional morpheme that is generated by the insertion procedure. This additional morpheme itself is subject to vocabulary insertion. Typical examples of fission come from Afro-Asiatic languages like Berber, Semitic and Cushitic where agreement is marked by combination of prefixes and suffixes (cf. Noyer 1997 among others for more details).

4.3 *Number, Gender and Second Person Elements in Afro-Asiatic*

This chapter focuses on Saho and Tigrinya person, gender and number morphemes. As the languages in question are members of Afro-Asiatic, however, we will have an overview of the person, gender and number morphemes in some languages of this family. Afro-Asiatic languages have independent and affix pronouns. The following are examples:

P./N./G.	Egyptian	Bedja	Akkadian	Tigrinya
1sg	ʔan-ūk	ʔan-i-h	ʔanāku	ʔan-ä
2ms	n-t-ūk	ba-r-ūk	*ʔanta >ʔatta	ʔan-ta
2fs	n-t-ūθ/t	ba-t-ūk	*ʔanti > ʔatti	ʔan-ti
3ms	n-t-ūf	ba-r-ūs	sū	nɨss-u
3fs	n-t-ūs	ba-t-ūs	sī	nɨss-a
1pl	an-on (Coptic)	han- an	nī-nū /anē-nū	nɨħna
2mpl	n-t-tn-ū	ba-rā-kn-a	*ʔantunū > ʔattunū	ʔan-tum
2fpl	n-t-tn-ū	ba-tā-kn-a	*ʔantinā > ʔattinā	ʔan-tɨn
3mpl	n-t-sn-ū	ba-rā-sen-a	šu-nū	nɨss-at-om
3fpl	n-t-sn-ū	ba-tā-sen-a	ši-nā	nɨss-at-än

Table I

In Table I, we have independent pronouns of Egyptian, Bedja, Akkadian and Tigrinya. As we can see from the table, the elements *n* or *m<n* mark plural number in Egyptian, Akkadian, Tigrinya and Bedja (cf. Loprieno 1995 for the etymological relationship between Egyptian preposition *m* 'in/at/by/with/from' and its Semitic counterpart *b* 'in/from/with/by'). In the languages indicated in Table I, second person morphemes are indicated by *t* or *k*. In the case of the latter (i.e. *k*) we can find *k > θ* or *k > θ > s* (cf. also Loprieno 1995; Kaye and Rosenhouse 1997 among others). In Bedja, gender is distinguished through the alternation of *-r-* and *-t-*. In Semitic languages, primary gender is marked by *-a/-i* while *-u -a* mark secondary gender. In Egyptian, gender is not distinguished in the plural. In the case of the singular, however, Loprieno (1995) indicates an element *-i*, similar to Semitic *-i*, as in *ki > θ* for 2nd person feminine singular.

In Tigrinya, the form nɨss followed by *ka* 'you (2ms)', *ki* 'you (2fs)', *kum* 'you (2mpl)' and *kɨn* 'you (2fpl)' are commonly used for second person pronouns. However, *nɨss* is formed on the analogy of the stem for third person pronouns. Hence, the author prefers to use the form *ʔan-* followed by *-ta* 'you (2ms)', *-ti* 'you (2fs)', *-tum* 'you (2mpl)' and *-tɨn* 'you (2fpl)'.

In section (4.2) above, we have indicated that word order can play a role in the development of agreement morphemes. In the pre-classical Mongolian languages, personal and demonstrative pronouns are placed after the finite verb. However, the personal pronouns can sometimes be put before the verb, but repeated after the latter (cf. Fuß 2005). We may assume similar situations in early Afro-Asiatic languages. In Semitic languages like Giʕïz, pronouns or demonstratives can occur in pre or post

verbal positions. Clitics or pronouns which precede and follow verbs can develop into prefixes and suffixes respectively. Furthermore, additional full forms could be added in preverbal positions, initially for reasons of emphasis or related reasons, which later develop into true subjects of the clauses. I assume they occur attached to the originally deictic element han (cf. Table I).

In Semitic languages, there are perfective and imperfective forms which are indicated by different CV (consonant and vowel) patterns. In the imperfective t can indicate second person subject prefix while in the perfective, *k/t* indicate second person subject suffix. Moreover, Semitic languages have suffixes which indicate non-subject forms. In Akkadian, Ugaritic, Hebrew, Syriac, Arabic, Giʕïz and Tigrinya suffix pronouns, second person is marked by *k* in the genitive, accusative, and dative forms. In Egyptian suffix and dependent pronouns, second person is indicated by k or *θ* < *k* (cf. Gardiner 1950 and Loprieno 1995 among others). According to Satzinger (2004: 487-497), the Egyptian absolute pronouns are of secondary origin and in many cases are derived from the forms that are regarded as object pronouns (also known as dependent or B pronouns).

4.4 *Phi-features in Saho and in Tigrinya*

As indicated above, Person, number and gender features go under the general name of Phi-features.

In Saho and Tigrinya, the verb may reveal person, number and/or gender of the subject and/or object. Furthermore, Saho and Tigrinya can have subject and non-subject independent pronouns which mark person, number and/or gender. In other words, Saho and Tigrinya can have morphemes which mark person, number and/or gender in independent pronouns, and pronominal affixes. The latter can be prefixes and/or suffixes.

Tigrinya has subject, object and possessive independent pronouns. Moreover, Saho has personal pronouns which can be classified into subject forms as in the case of atu 'you (2s)', short non-subject forms as in *ku* 'you (2s)', and long non-subject forms as *kowa-/kowyya/-kotta* 'you (2s)'. Furthermore, Saho has forms like *kutiya* 'you (2s)' which can correspond to forms such as the genitive/accusative *kuāti* (2ms) and *kāti* (2fs) in Akkadian. In this chapter, however, we will focus on perfective and imperfective subject verbal affixes and also subject independent pronouns of the two languages in question.

4.5 *Phi-features and Second Person Subject Independent Pronouns of Saho-and Tigrinya*

According to Fuß and Trips (2004: 16), "A related avenue of research has to do with the question of how diachronic data can be taken into account to provide new insights for the analysis of individual present-day languages". Hence, some relevant data from ancient languages may be taken into consideration in this chapter too. We have indicated above that the two languages in question have subject and non-subject independent pronouns. As the focus is on the former, we have the subject independent pronouns of Tigrinya and Saho in Table II below.

P./N./G. of Tigrinya	Sub. Independent Pronouns	Sub. Independent Pronouns	P./N./G. of saho
	Tigrinya	Saho	
1sg	ʔan-ä	anu	1sg
2ms	ʔan-ta	atu	2s
2fs	ʔan-ti		
3ms	nɨss-u	usuk	3ms
3fs	nɨss-a	ishi/ishe	3fs
1pl	nɨħna	nanu	1pl
2mpl	ʔan-tum	atin	2pl
2fpl	ʔan-tɨn		
3mpl	nɨss-at-om	usun	3pl
3fpl	nɨss-at-än		

Table II

Table II above shows that Tigrinya has second person pronouns *ʔan-ta* 'you (2ms)', *ʔan-ti* 'you (2fs)', *ʔan-tum* 'you (2mpl)' and *ʔan-tɨn* 'you (2fpl)'. Moreover, Saho has the pronouns (*ʔ*)*atu* 'you (2s)' and (*ʔ*)*atin* 'you (2p)'. Saho does not distinguish gender in the second person singulars and in the plurals. Taking the Akkadian, Tigrinya and other related languages into account, we assume *ʔan-tu* > (*ʔ*)*atu* 'you (2s)',* *ʔantin* > (*ʔ*)*atin* 'you (2pl)'. I think it is not difficult to see the deletion of *n* in Saho.

As we can see from Table II above, second person singulars and plurals are marked by *t* in both Saho and Tigrinya. In Tigrinya, we have ʔ*an-ta* 'you (2ms)' ʔ*an-ti* 'you (2fs)' in the singular forms. It can be observed that *t* marks second person while the vowels *a* and *i* following the second person marking element *t* indicate masculine and feminine respectively. Moreover, we can also see that ʔ*an-* is a Pan-Afro-Asiatic pre-formative element. In Tigrinya the element *n-* in the form ʔ*an-* can optionally be assimilated to the following *t* as in ʔ*an-ta* > ʔ*att-a* or ʔ*anti* > ʔ*atti* (cf. also Buccellati 1996 among others for similar process in Akkadian). In Saho, we do not overtly see the element *n-* in ʔ*an*. It is deleted and thus we see ʔ*an-* > (ʔ)*a-*. Saho has (ʔ)*atu* for the masculine and feminine second person singular pronoun. The morpheme *t* in (ʔ)*atu* marks second person. In the plural, Saho has (ʔ)*atin* 'you (2pl)'. The vowel *-i*, (in the second person plural of Saho) following the element *t* in (ʔ)*atin* appears similar to Semitic primary feminine gender marker *-i*. The vowel *-u*, following *t* in (ʔ)*atu*, may correspond to Semitic secondary gender marker *-u*. None the less, these merit further research. The currently used Saho does not have second person pronouns which distinguish gender. However, the number is marked by *n*. The element *n* occurs in the plural second pronoun (ʔ)*atin* (it has *n* which indicates plurality). But we do not find this *n* in the singular form (ʔ)*atu*. In Tigrinya, we have ʔ*an-tum* and ʔ*an-tin*. However, they can also occur (though not frequent) as ʔ*an-tumu* and ʔ*an-tɨnä* (cf. also the sections below for the discussion on the final vowels *-u* and *-a* of pronominal affixes) respectively. The latter (i.e., ʔ*an-tɨnä*) is derived from ʔ*antina* while the former is, I assume, derived from ʔ*antanu* (cf. Lipinski 1997: 298 among others for Paleosyrian [2mpl] ʔ*antanu*). I assume ʔ*an-tanu* > ʔ*an-tumu* by the regressive assimilation of *-u*. I assume *n* > *m* and *a* > *u* due to the influence of the last vowel *-u* (cf. also Buccellati 1996: 206 for the secondary gender markers *-ū* and *-ā* in Akkadian *antunū* [2mpl] and ʔ*antinā* [2fpl] respectively).

4.6 *Perfective and Imperfective Verb Forms in Saho and in Tigrinya*

The Phi-features may occur attached to different verb stems. But in this chapter, only the perfective and the imperfective verb stems are taken into consideration. In Tigrinya and Saho, perfect and imperfect forms are indicated by different cv (consonant-vowel) patterns.

Saho verbs can be divided into class I, class II, class III and class IV. The last two belong to stative and compound verbs (cf. Vergari and Banti 2005). In this chapter, only class I verbs (e.g. *eerhege* 'I knew' and *aarhige* 'I know') and class II verbs (e.g. *faak-e* 'I opened' and *faak-a* 'I open') are indicated below (cf. Vergari and Banti 2005 for the examples). Observe the following table:

P./N./G.	Saho class I verbs		Saho class II verbs	
	Perfective	Imperfective	Perfective	Imperfective
1sg	eerhege	aarhige	faak-e	faak-a
2s	t-eerhege	t-aarhige	fak-te	fak-ta
3ms	y-eerhege	y-aarhige	faak-e	faak-a
3fs	t-eerhege	t-aarhige	fak-te	fak-ta
1pl	n-eerhege	n-aarhige	fak-ne	fak-na
2pl	t-eerheg-in	t-aarhig-in	fak-ten	fak-tan
3pl	y-eerheg-in	y-aarhig-in	faak-en	faak-an

Table III

As we can see from Table III, Saho perfective and imperfective forms are indicated by different vowels in the stem. In the perfective we have e following the person morpheme such as t while in the imperfective we have a following the person morpheme such as *t*.

Tigrinya can have gerundive, perfective and imperfective stems. Both gerundive and perfective forms have perfective functions. Hence, in this chapter both of them will be included under perfective aspect. Tigrinya has type A verbs as in *qätäl-ka* 'you (have) killed' or *qätil-ka* 'you (have) killed' *ti-qättil* 'you kill', Type B verbs as in *wässän-ka* 'you (have) decided' *wässin-ka* 'you (have) decided' *ti-wissin* 'you decide', Type C verbs as in *baräx-ka* 'you (have) blessed' or *barix-ka* 'you (have) blessed' and *ti-barix* 'you bless'. Observe the following:

P./N./G.	Tigrinya			
	Perf. A	Imperf. A	Perf. C	Imperf. C
1sg	qätil-ä	ʔi-qättil	baräx-ku	ʔi-barix
2ms	qätil-ka	ti- qättil	baräx-ka	ti-barix
2fs	qätil-ki	ti- qätl-i	baräx-ki	ti-barix-i
3ms	qätil-u	yi- qättil	baräx-ä	yi-barix
3fs	qätil-a	ti- qättil	baräx-ät	ti-barix
1pl	qätil-na	ni- qättil	baräx-na	ni-barix
2mpl	qätil-kum	ti- qätl-u	baräx-kum	ti-barix-u

2fpl	qätil-kɨn	tɨ- qätl-a	baräx-kɨn	tɨ-barɨx-a
3mpl	qätil-om	yɨ- qätl-u	baräx-u	yɨ-barɨx-u
3fpl	qätil-än	yɨ- qätl-a	baräx-a	yɨ-barɨx-a

Table IV

We can see from Table IV that Tigrinya perfective and imperfective forms are indicated by consonant and vowel patterns. However, in Tigrinya the vowels which distinguish perfective and imperfective aspect are inserted within the verb root which consists of consonants, while in Saho, the vowels -e- and -a- in perfective and imperfective aspects respectively are put after the morpheme which indicates person. The verb types of Tigrinya do not differ in their affixes. For instance, type A, type B and type C verbs take the same affixes in the perfective.

4.6.1 *Pronominal Affixes*

As illustrated in (4.5) above, we have independent subject pronouns of Saho and Tigrinya. The second person (in these languages) is indicated by -t-. Furthermore, Tigrinya and Saho independent subject pronouns have a morpheme n which marks number. In Tigrinya, as in other Semitic, we can have primary and secondary gender markers. As can be seen from our discussion above and the sections below, the languages in question have pronominal affixes which can indicate person, gender and number (cf. also Table III).

4.6.1.1 *Second Person, Gender and Number Markers in the Pronominal Affixes of Saho*

As indicated above, the Saho verbs in this chapter are selected from class I and class II verbs. In both classes, second person pronouns are marked by the morpheme t while number is marked by n.

4.6.1.2 *Second Person Markers in Saho*

We have seen above that the element t indicates second person. Observe the following:

	Perf. (class I)	Imperf. (class I)	Perf. class II	Imperf. (class II)
2s	t-eerhege	t-aarhige	fak-te	fak-ta
2pl	t-eerheg-in	t-aarhig-in	fak-ten	fak-tan

Table V

However, it is also interesting to see that the morpheme t occurs as a prefix and as a suffix. In class I verbs of Saho, second person pronouns are marked by the prefix *t-*, while in class II verbs second person pronouns are indicated by the suffix *-t*.

4.6.1.3 *Number Markers in Saho*

We can observe from Table V that Saho has a morpheme which marks plurality. In t-eerhege and t-eerhegin, for instance, the former and the latter show singular and plural respectively and this is due to the morpheme *n* in *t-eerhegin* (cf. Table V).

4.6.1.4 *Gender in Saho Verbal Affixes*

In the independent subject pronouns, we can observe that Saho does not distinguish gender in the plurals and in the second person singulars. In the same way, we can see from Table V that Saho verbs do not have morphemes to distinguish gender in the plurals and in the second person singulars.

4.6.1.5 *Second Person, Gender and Number Markers in the Pronominal Affixes of Tigrinya*

As in the case of Saho, Tigrinya has verbal affixes which indicate person and number. The second person pronouns are marked by *t/k* while number is marked by *n*.

Tigrinya has Type A, Type B, and Type C verbs. However, these verbs have similar prefixes and suffixes which indicate person, number and gender. As we can see from Table VI below, the second and third columns show verbs of type A with perfective (in the gerundive stem) and imperfective forms respectively. In columns 4 and 5, we see verbs of Type C with perfective (in the perfective stem) and imperfective forms respectively as illustrated in the following:

P./N./G.		Tigrinya		
	Perf. A	Imperf. A	Pref. C	Imperf. C
2ms	qätil-ka	tɨ- qättɨl	baräx-ka	tɨ-barɨx
2fs	qätil-ki	tɨ- qätl-i	baräx-ki	tɨ-barɨx-i
2mpl	qätil-kum	tɨ- qätl-u	baräx-kum	tɨ-barɨx-u
2fpl	qätil-kɨn	tɨ- qätl-a	baräx-kɨn	tɨ-barɨx-a

Table VI

4.6.1.6 *Second Person Markers in Tigrinya*

In Table VI, the subject can be indicated by suffixes and prefixes. In the perfective, the subject is indicated by suffixes while in the imperfective, the subject is marked by prefixes. The morpheme *t-* in the prefixes corresponds to *-k* in the suffixes. The element *-k* is followed by *-a* and *-i* to form *-ka* and *-ki* respectively. The vowels *a* and *i* (in *-ka* and *-ki*) are gender markers. The former marks masculine while the latter indicates feminine. The morpheme *k* in the suffixes corresponds to the morpheme *t* in the prefixes. In the (2ms) of the prefixes, gender is not marked. But in the (2fs) (prefix), gender is marked by the suffix *i* which is similar to the gender marker *i* in *-ki* (suffix). Moreover, Tigrinya has second person masculine and feminine plural morphemes *-kum* and *-kɨn* which can be realized as *kumu* and *kɨna* when followed by object suffixes. The suffixes *-kum* and *-kɨn* can be compared to their counterparts in other Semitic Languages. The former corresponds to Proto-Semitic (2mpl) subject pronoun *tanū* > *tumū*, and to the genitive (2mpl) forms *kunū* (< *kanū*) in Akkadian and *kanu* in Ugaritic. The latter (i.e., *-kɨn/-kɨna*) corresponds to Proto-Semitic (2fpl) subject pronoun *-tinā* and also to genitive and/or accusative (2fpl) forms *-kinā* in Akkadian, *kinā* > *kēn* in Aramaic. As in the case of several other Semitic languages *-kɨn* (or *kɨna*) is derived from *kina*. The element *-k-* marks second person, while the vowel *-i* following *k* (derived from an earlier *i*) indicates primary feminine gender.

4.6.1.7 *Number Markers in Tigrinya*

As indicated in Table VI, the suffixes and prefixes can indicate a subject. We also said that the affixes mentioned above are composed of different morphemes. These morphemes can indicate person and gender. However,

the pronouns have also number indicating morphemes. In the independent subject pronouns and in the perfective verbal stems in Table VI, we can see that number is indicated by *n* or *n* > *m* (cf. Egedi 2005; Siddiqi 2009 for related data in Berber and Egyptian respectively). In the imperfectives in Table VI, however, number indicating morphemes are not overtly seen. Taking the data from Saho and other related languages into account, we can assume that Tigrinya, at some point in its history, had the element n to indicate number. But in the present usage, the imperfective forms of Tigrinya have lost this number distinguishing element. The feminine secondary gender marker a and the masculine secondary gender marker *u* are also used to indicate plurality. Thus, the former and the latter show feminine plural and masculine plural respectively of the second person.

4.6.1.8 *Gender Markers in Tigrinya*

As indicated above, the morpheme *n* (or its variant *n* > *m*) is a plural marking element while the element *-a* (following *n*) appears if followed by an object suffix and indicates a secondary feminine gender (cf. Buccellati 1996 for the vowels *-ū* [masculine] and *-ā* [feminine] secondary gender markers in Akkadian). As illustrated above, Tigrinya has the primary gender markers *-a* (for the masculine) and *-i* (for the feminine). Tigrinya *kum* indicates 2mpl. But I assume it is derived from **kanu*. I believe, the primary gender marker in 2mpl was originally marked by *a*. However, it was changed to *u* due to regressive assimilation. Thus, I assume **-kanu* > **-kunu*. Later in the history of the language, further changes were made. I assume **-kunu* > *-kumu* or *-kum*. The change of n to m was due to assimilation (by *u*) which may be followed by the deletion of the last vowel *u*. The last vowel *-u* which was supposed to indicate secondary gender is, I assume, hidden in *m*. Thus, even when the morpheme *-u* is deleted or not overtly seen, the element m may be assumed to indicate masculine and plural. In the 2fpl too, the morpheme *-a* in *kɨna* may not be overtly seen. If we assume m to indicate masculine plural, *n* may by default indicate feminine plural. However, we have also the primary gender markers *i* > *ɨ* in kina > *kɨna* and also *a* > *u* in *kanu* > *kumu* > *kum* (cf. also the discussion in 4.6.1.7 above).

4.7 *Relationship Among Phi-features in the Languages in Question*

In Afro-asiatic languages (like Saho and Tigrinya) the elements indicating person and number can be prefixes, suffixes or both prefixes and suffixes. In the languages in question, these affixes show very interesting similarities.

4.7.1 *Relationship among Phi-features in Saho and in Tigrinya*

We can observe in Tables III-IV that the verbal aspect of both Saho and Tigrinya are marked by consonant and vowel patterns of the verb stem. It can also be observed that the subject pronominal affixes which indicate person and number are attached to the verb stems of the languages in question as prefixes and/or suffixes.

In the imperfective form of Tigrinya (as in the case of Proto-Semitic and other Semitic languages), second person indicating subject is marked by the prefix *t-*, while gender is marked by suffixes. In *ti- qätl-u* and *ti- qätl-a*, for instance, *t* indicates second person while *-u* and *-a* mark masculine gender and feminine gender respectively. The morphemes *-u*, and *-a* are actually secondary gender markers which, as in *-kina* and *-kumu* in the perfective form, can be expected to occur after the number element *n* or *n > m*. In the imperfectives of Tigrinya, however, the element which was expected to indicate number is deleted and the elements which look like the originally secondary gender markers indicate both number and gender of the subjects.

Greenberg (1966a) assumes a verbal agreement in gender becomes available only if the language has developed a full paradigm of number. It is indicated in the literature that gender agreement, at least in verbs, is highly marked grammatical trait which is found only in a couple of languages. Such generalization on the distribution of morpho-syntactic features can be explained if we assume that φ-features are organized hierarchically where number features dominate gender features (cf. Fuß 2005: 255). Whenever the verb agrees with nominal subject or nominal object in gender, it also agrees in number (cf. Greenberg 1966a). A language can develop verbal agreement in gender only if it has previously grammaticalized a set of number distinctions (Fuß 2005). If we take the data from Arabic (e.g. *t-*[...]*-na* [2fpl]), Hebrew (e.g. *t-*[...]*-nā* [2fpl]) and Aramaic (e.g. *t-*[...]*-ān* [2fpl]) and also the Saho data indicated above into account, we may assume the deletion of the number element in Tigrinya. In the imperfective, Tigrinya does not have an overt number marker. But it has gender markers, which also function as number markers. Following Fuß (2005), I assume this is because the language has a set of covert number distinctions previously grammaticalized at some point in its history.

In the perfective, Tigrinya subject pronominal affixes are suffixes. In these suffixes, person is indicated by *-k-* followed by number and gender elements (cf. also the discussion below). In Saho, both perfective and imperfective forms of class I, indicate their second person by prefix *t-*. But in class II verbs, second person is marked by suffix *-t* in both perfective and imperfective forms.

In Tigrinya, the second person pronominal affixes make gender distinction. However, it can be observed from the Tables in (III-IV) above

that Saho second person pronominal affixes do not show gender distinctions. This appears common in world languages. Gender agreement is highly marked grammatical trait and hence is not commonly found in languages. According to Greenberg (1966a) and Fuß (2005), verbal agreement for gender becomes available only if a language has developed a full paradigm of number distinction. According to Fuß (2005: 255), this is because the possibility of gender distinctions appears to depend on the existence of number distinctions. Saho, however, makes number distinctions. The fact that its verbal stems do not make gender distinctions merit further research. However, it appears to me that any gender feature is reduced to a bundle with no feature by impoverishment. I assume the gender feature is deleted from the structure (cf. Harley 2008: 157-8 for similar views related to Latin and Russian).

In Table II, we have independent subject pronouns. As we can see from Table II, second person singulars and plurals are marked by t in both Saho and Tigrinya. In Tigrinya, we have *ʔan-ta* 'you (2ms)' *ʔan-ti* 'you (2fs)' in the singular forms. It can be observed that t marks second person while the vowels a and i following the second person marking element t indicate masculine and feminine respectively. Moreover, we can also see that *ʔan-* is a Pan-Afro-Asiatic pre-formative element. In Tigrinya, the element *n-* in the form *ʔan-* can be assimilated to the following *t* as in *ʔan-ta > ʔatt-a* or *ʔanti > ʔatti* (cf. also Buccellati 1996 among others for similar process in Akkadian). In Saho, the element *n-* in *ʔan-* is deleted and thus we see *ʔan- > (ʔ)a-*. Saho has *(ʔ)atu* for the masculine and feminine second person singular pronoun. The morpheme *t* in *(ʔ)atu* mark second person. In the plural, Saho has *(ʔ)atin* 'you (2pl)'.

Saho has, in the plural, the vowel *-i* following the element *t* in *(ʔ)atin* which may appear similar to Semitic primary gender marker *-i*. The currently used Saho does not have second person pronouns which distinguish gender. As in the case of verb stems, I assume the gender feature is deleted from the structure in Saho second person singular and plural independent subject pronouns too. The number is marked by *n*. The plural second person pronoun *(ʔ)atin* is different from its singular counterpart in that it has n which indicate plurality.

In Tigrinya, we have *ʔan-tum* and *ʔan-tɨn*. However, they can also occur (though not frequent) as *ʔan-tumu* and *ʔan-tɨnä* (cf. also the discussion on the final vowels *-u* and *-a* of pronominal affixes) respectively. The latter is derived from *ʔantina* while the former is, I assume, derived from *ʔantanu* (cf. Lipinski 1997: 298 among others for Paleosyrian 2mpl *ʔantanu*). I assume *ʔan-tanu > ʔan-tumu* by the regressive assimilation of *-u*. We see *n > m* and *a > u* due to the influence of the last vowel *-u* (cf. also Buccellati 1996: 206 for the secondary gender markers *-ū* and *-ā* in Akkadian *ʔantunū* (3mpl) and *ʔantinā* (3fpl) respectively and Saddiqi 2009 for *n > m* in similar Berber data).

4.7.2 *Afro-Asiatic Nature of the Relationship*

In both Tigrinya and Saho, different vowels are inserted into the verb stems to indicate aspect (perfective and imperfective). In the independent subject pronouns of Saho and Tigrinya, we see the morpheme *t* which mark second person. In the imperfective aspect of both the languages in question, we have *t* which corresponds to the second person morpheme in independent subject pronouns. In Tigrinya, subject second person morphemes are, as in other Semitic, prefixes in the imperfective and suffixes in the perfective. In Saho, on the other hand, subject second person morphemes are prefixes in perfective and imperfective aspects of class I verbs and suffixes in perfective and imperfective aspects of class II verbs. In Akkadian, Arabic, Aramaic, Hebrew and Proto-Semitic subject second person morpheme is indicated by *t* in the perfective subject suffixes. But in Tigrinya and in other Eritrean and Ethiopian Semitic languages, second person morpheme is indicated by *k* in the perfective subject suffixes. In Saho, however, this second person morpheme is indicated by *t* (not *k*) in the perfective and imperfective subject suffixes and prefixes. Thus, the fact that second person morpheme in the perfective and imperfective subject affixes is indicated by t is not limited to Semitic in general or to a branch of Semitic in particular. As indicated above, it also occurs in Cushitic.

In different Afro-Asiatic languages, either *k* (as in Bedja) or *t* (as in Egyptian and Saho) can be used as second person morphemes in different independent subject pronouns. In the subject pronominal affixes too, either *k* (as in Egyptian *ku > k* [2ms]; *ki > θ* [2fs]; *kina > θn* [2pl]) or *t* as in Saho) can be used as second person morphemes.

Different Ethio-Eritrean Semitic languages use the element *k* to indicate second person subject morpheme in the perfective aspect which corresponds to its counterpart t in other Semitic languages in the Middle East. In the non-subject pronominal affixes, however, *k* (or elements derived from *k*) indicates second person in different Afro-Asiatic languages such as Egyptian and Semitic languages such as Akkadian. Satzinger (2004: 487-497) discusses the different pronominal elements in Afro-Asiatic languages. According to him the forms of absolute pronouns like Egyptian *ink* are of secondary origin and in many cases they are derived from those forms that are regarded as the object pronouns (also known as 'dependent' or 'B pronouns'). Satzinger (2004) assumes that B pronoun is the unmarked form. If Afro-Asiatic data are taken into consideration, the second person pronominal affixes with a *k* element may be more archaic than their counterparts with the *t* as a pronominal element. This, however, merits further investigation.

The Afro-Asiatic languages include Egyptian, Semitic, Cushitic, Libyco-Berber and Chadic. Saho and Tigrinya belong to Cushitic and Semitic respectively. The number and person features of Saho and Tigrinya indicated above are Afro-Asiatic features (cf. also Thacker 1954; Castellino 1962; Zaborski 1991).

4.7.3 *The Possible Role of Number and Person Markers in Semitic Classification*

In Saho (Cushitic), North West Semitic and East Semitic languages, the second person morpheme is marked by *t* in the perfective and imperfective subject affixes. In Tigrinya, however, the second person morpheme is indicated by *t* in the imperfective affixes and by *k* in the perfective affixes. On the other hand, the second person morpheme is indicated by *k* in the non-subject pronominal suffixes of Semitic languages.

As in the case of Akkadian *-tinā* (2fpl) and Tigrinya **kina > kɨn* (2fpl) the element *n* marks number in the perfective. In the independent subject pronouns (such as Akkadian *ʔantunū* [2mpl] and *ʔantinā* [2fpl], or Tigrinya **ʔantina > ʔantɨn* [2fpl]) and in the non-subject pronominal suffixes (such as *kina > kɨn* [2fpl] in Tigrinya), *n* shows plurality.

In Tigrinya imperfectives, subject is indicated by discontinuous agreement morphemes, though the element *n* is not overtly seen. In Table VI, for instance, we have *t--u* (2mpl) and *t--a* (2fpl) which correspond to Akkadian *t---ū* (2mpl) and *t---ā* (2fpl). On the other hand, the element *n* appears in several Semitic languages as in the case of Aramaic *t--ūn* (2mpl), *t--ān* (2fpl), and Arabic *t--ū- na* (2mpl), *t--na* (2fpl) which may correspond to the Saho plural element *n* in the discontinuous morpheme *t..in* (in table III) or in the suffix *-ten* (in Table V).

Some scholars used to assume that the elements -Vn or -nV is an innovation of Central Semitic languages (cf. Hetzron 1975; Goldenberg 1977; Voigt 1987). However, the element *n* in -Vn or -nV occurs in Ancient South Arabian languages and in Cushitic languages as in, for instance, *te-kátim-na* 'you (pl) arrive' in Bedja (cf. Thacker 1954; Castellino 1962; Zaborski 1991). Furthermore, we can also see in this chapter that Saho has the morpheme *n* which mark plurality and occur attached to the perfective and imperfective stems. As the person and number morphemes indicated above are archaic Afro-Asiatic features (not innovations which belong to a particular group), they may not help for classification (cf. Zaborski 1991 for similar views).

4.8 *Possible Developments of the Pronouns*

There are different views regarding the development of independent pronouns and pronominal affixes. Alexiadou (2004) believes the German possessive pronouns originate from a number of different pronouns[1]

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[1] In the 1st and 2nd person singular and plural of German, the possessive pronouns have developed from the genitive forms of the personal pronouns. In the third person masculine singular and neuter, the possessives have developed from the genitive form of reflexive

and hence the individual possessive pronouns differ from each other in behaviour.

In some languages, independent pronouns can develop from verb endings or affixes as in the case of Irish (cf. Askedal 2008: 54-55).
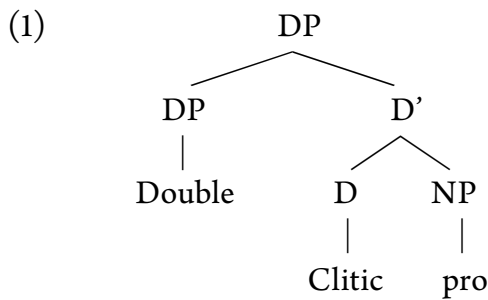
In the literature, it is indicated that independent pronouns can be originally deictic elements which may be employed as pronominal subjects and objects (cf. Retsö 1989 among others). Hodge (1969) believes that the concept of person was not necessarily basic to the system of Early Afro-Asiatic and the particle *k* occurred in first, second and third persons.

Satzinger (2004: 487-497) discusses the different pronominal elements in Afro-Asiatic languages. According to him the forms of absolute pronouns like Egyptian *ink* 'I' are of secondary origin and in many cases they are derived from those forms that are regarded as object (also known as dependent or B) pronouns.

It may be possible to assume the development of demonstratives, pronouns or other lexical items into clitics and then into affixes (cf. Fuß 2005 among others). As indicated above, however, it may also be possible to assume the development of affixes into clitics and then into pronouns. When there are prefix pronominal affixes and suffix pronominal affixes in languages, the role of clitics appears to be very important. We may assume the development of affixes into pronouns or pronouns into affixes via a clitic stage (cf. also Harris 2008: 279). In comparison to pronominal affixes, clitics can have different positions. Clitics may appear before or after verbs which develop as prefixes in the case of the former or suffixes as in the case of the latter. Clitics may be regarded as a prerequisite for the grammaticalization of new agreement markers. It is possible to assume, at least in some languages, that new forms of agreement may result from a formerly stylist strategy. We may assume the addition of a full DP/tonic pronoun for the sake of emphasis or in order to reinforce a phonologically defective clitic leading to clitic doubling.

According to Fuß (2005), the clitic D-head selects full nominal (henceforth called the "double") in its specifier for a reinforcing (cf. Uriagereka 1995; Kayne 2002) and the two elements are then merged together in a 'big DP'. The big DP is composed of the reinforcing full nominal or the double in its specifier, the clitic in D and pro in NP dominated by D'. Let us see the following tree in (1).

pronouns. But there were no possessive pronouns for all other third person pronouns (3rd person feminine singular and 3rd person plural) in Old High German. However, the function was taken over by the genitive forms of the personal pronouns of the third person singular feminine and the third person plural (cf. Alexiadou 2004: 49-50).

(1)

```
                    DP
              ┌──────┴──────┐
             DP            D'
              │          ┌──┴──┐
           Double        D    NP
                         │     │
                       Clitic  pro
```

(Fuß 2005: 194)

In the literature it is indicated that in several Rhaeto-Romance (RR) dialects, clitic doubling can be optional. However, in Sutselvan (one of the RR dialects) clitic doubling is obligatory. The fact that doubling is not necessarily used for emphasis and does not obey the definiteness restriction observed in other dialects of RR suggests at some point in the history of the language, it (doubling) has lost its use for emphasis or stylistic force due to probably over-use. In the course of time, the construction may lose its stylistic or emphatic force of the full pronoun. On the other hand, the eventual reanalysis of the originally reinforcing or emphatic element into a "real" argument can be assumed, while the former clitic can be reinterpreted as a verbal agreement (like person or number) marker (cf. Fuß 2005: 183-216 among others).

Fuß (2005: 82) argues, any of the functional categories C, T, v or D can, in principle, host the agreement morphemes. By assumption, Subject-verb agreement results from an agreement morpheme adjoined to T, while object-verb agreement involves the presence of an agreement morpheme added to v.[2]

In the literature, it is indicated that the complex DP, as in the case of Swiss RR languages, can be base generated in Spec,vP, where it receives the Θ-role for external argument. Subsequently, Fuß argues, the complex or big DP (cf. Grewendorf 2002) moves to Spec, TP and from there the clitic may adjoin to C at either at MS/PF or in the overt syntax (cf. Fuß 2005: 193-5 for details).

As can be illustrated in (2), object agreement can be checked after the merging of v with its complement VP which contains the object.

[2] Fuß (2005: 24) quotes (Chomsky 1993, 1995) and says in earlier versions of minimalist program it was assumed that "[...] functional heads host formal features such as [Nominative], [Past] and φ-features (e.g. [person], [number] and [gender]) which are deleted by entering into a checking relation with identical features on substantial lexical categories such as N, V, or A. The latter are combined with inflectional affixes in the lexicon and are inserted fully inflected" (cf. Fuß 2005: 24-28, for Chomsky's 2000, 2001a, 2001b revised analysis).
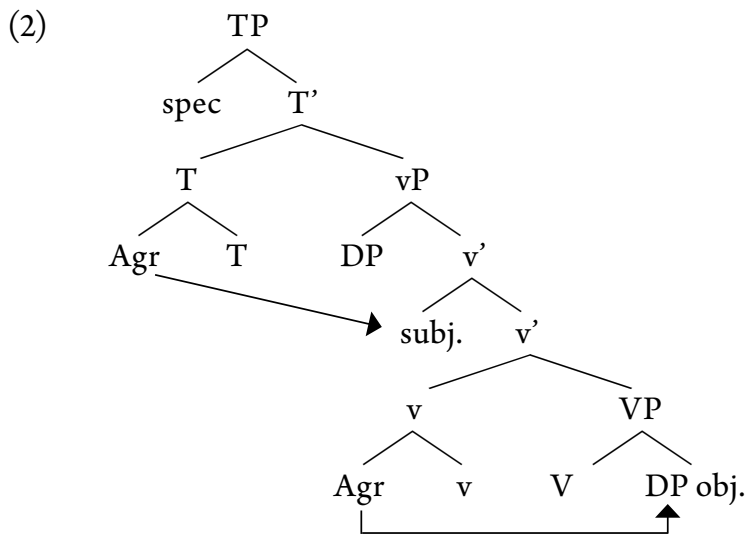
In the structure in (2), the head complex [v agr(v)] can (under closest c-command) enter into an agree relation with the feature set of the object. As indicated in the literature, the movement of pronouns to C is not limited to V2 languages (such as the Swiss RR languages) mentioned above. According to Fuß (2005: 211-215), weak pronouns can adjoin to C in SOV languages like Mongolian. According to him, this cliticization movement can be followed by fronting of a larger constituent, presumably TP, into a CP.

It appears that the Agr-morphemes do not occupy a unique position in the structure of the clause. They are parasitic on contentful functional categories like C, T, D, v. The reanalysis of pronominal elements as agreement formatives can come about from different syntactic environments. Thus, attempts to reduce the grammaticalization of these elements to a single syntactic scenario appear to be misguided.

In Distributed Morphology, it is assumed that the morphological derivation must reflect the syntactic derivation. The phonological exponent of the lower functional head must be closer to the verb stem than the phonological exponent of the higher functional head. As a consequence, vocabulary insertion affects the verbal or nominal roots before it affects functional heads that the roots adjoin to (known as root-out insertion) (cf. also Fuß 2005: 90-2 for more details).

As indicated above, Fuß (2005) argues subject-verb agreement involves the presence of an agreement morpheme added to T, whereas object agreement results from an agreement morpheme added to v.[3] Observe the tree structure in (2) adopted from (Fuß 2005: 84):

[3] In is indicated in Marantz (1992), Halle and Marantz (1993) and also Halle (1997) that agreement is purely morphological phenomenon and agreement heads are completely absent from syntactic component. They assume that they are only added post-syntactically at morphological structure to substantial functional categories like T, Asp or Neg that are represented in syntax (cf. also Fuß 2005 for more details). However, this view is not shared by all. According to Fuß and others, agreement features/morphemes are (i) present in the syntax, though parasitic on other functional heads (ii) part of the numeration, but do not head their own projections in the syntax (iii) merged with other 'substantial' functional heads before the latter are combined with phrasal complements (cf. Fuß 2005: 82 for more details).

(2)

```
                        TP
                      /    \
                  spec      T'
                          /    \
                        T        vP
                      /   \     /   \
                   Agr     T  DP     v'
                                    /   \
                              subj.      v'
                                       /    \
                                      v      VP
                                    /   \   /   \
                                 Agr     v V     DP obj.
```

As indicated in the literature, not all languages show overt movements. In principle, OV languages always allow the verb to stay in situ and combine with the argument morpheme on T via Morphological Merger at MS. This is because in a strictly OV grammar the verb is always string-adjacent to the set of right functional heads (cf. Fuß 2005 among others). This may hold for SOV languages like Tigrinya too. In different SOV languages like Mongolian, personal and demonstrative pronouns occur before or after verbs. In Giʕïz, a classical language of Eritrea and Ethiopia, we have pronouns which occur in different positions. In the languages in question, the pronouns may develop into clitics and/or into affixes.

In the literature, subjects can be assumed to be former topics. The example in (3) is taken from Fuß and Trips (2004).

(3) [The wizard],   he-i lived in Africa   ⟶   The wizard   he-lived in Africa

     Topic   Pronoun   Subject   AGR

(Fuß and Trips 2004)

As indicated in (3) above, the topic and the pronoun are changed to a subject and to agreement affix respectively. We may assume something similar to this in the early form of the current Afro-Asiatic languages. Let us see the imperfective form in (4ai-bi) and the perfective form in (4aii-bii) of Tigrinya:

(4) ai. *han-tina t- barix-a   ⟶   bi. ʔantin   t-barïx-a

          Topic   pronoun bless-f(pl)   vocative   prefix-bless-f(pl)

                                                     'you (2fpl) bless'

(4)   aii.   *han-ti   barix-ki $\longrightarrow$ bii.   ʔanti   barix-ki

          Topic   bless pronoun (2fs)   vocative   bless suff.2fs

                                                              'you (2fs) blessed'

I assume (4bi) and (4bii) are derived from (4ai) and (14aii) respectively. The meaning of earlier form *han-tina* could be assumed to be **hantina* 'you there/those of you'. The formal relationship between *han-tina* and the currently used *ʔantin(a)* seems clear. Moreover, I assume we can relate the vocative meaning of the currently used *ʔantin(a)* 'you there/hey' and the possible meaning of **hantina* indicated above.

The development of former topics into subjects can go hand in hand with the development of pronouns/clitics into agreement affixes. The data in the languages in question clearly show that the pronominal agreement affixes and the independent pronouns are related. I assume the second person independent subject pronouns of the languages in question are derived from an ancient deictic element *han* and a pronoun such as *ti-na* or *kina* composed of person, number and/or gender features (cf. also 4.9). Taking the Afro-Asiatic data into account (cf. also Tesfay Tewolde, ongoing research; Satzinger 2004) may be right in regarding the object pronouns as the unmarked forms and in assuming the derivation of other pronouns from them.

As in other languages, we can assume the development of pronouns into clitics and then into affixes[4] in certain contexts. We can have prever-bal and post-verbal clitics which can develop into prefixes and suffixes respectively. We have observed that the elements indicating second person in Saho and in Tigrinya are *t* and/or *k*. In different Semitic and Afro-Asiatic languages, *k* indicates second person in non-subject pronouns. Taking Satzinger's proposal into consideration, the element *k* could be the original person marker. We may assume an original *t* indicating feminine gender which later became a 2nd person marker. But it may also be possible to assume a derivation of *t* from *k* (i.e., *k* > *t*). However, the details merit further research.

As indicated above (cf. also (1)), a full DP can be added to reinforce the clitic (or for emphasis). I assume such an argument or something related to it may fit to the data of the languages in question. In the case of

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[4] In the literature, we can find views regarding φ-features, case and tense as in the following: a) case assignment can be independent of the realization of agreement (cf. Fuß 2005: 84); b) "[...] what we call case is actually an uninterpretable aspect/tense feature on D heads (cf. Gallego 2010: 79 among others); c) "[...] Structural case is a "reflex of an uninterpretable φ-set" (cf. Chomsky 2000: 122 quoted in Manninen 2003: 49); d) prepositions bear T-features similar to tense (cf. Arteaga and Herschensohn 2010: 291).

Saho, Tigrinya and related languages, the pronominal morphemes can move to a Spec position and attach to the deictic element *han > ʔan*. The main formal difference between the independent subject pronouns and the subject pronominal affixes is the presence of *ʔan* (or *ʔan > (ʔ)a* in the case of Saho) in the former. This *ʔan-* (*< han*) is a pan-Afro-Asiatic preformative which can be related to an ancient deictic particle *han*. The Proto-Semitic particle which used to function as a demonstrative is assumed to be **hanni* which changed into different demonstrative forms. For instance, we have a demonstrative annum in Old Akkadian, *ïňňi < hanni* 'that' in an Ethiopian Semitic language called Argoba. The demonstrative *annitān* at Mari is interpreted as a frozen feminine dual originally meaning "this and that", "thing, matter". Initially, the demonstrative may be added to the pronoun for reinforcement or emphasis and hence we may get pronominal forms with and without deictic form. In the course of time, I assume the form with deictic particles (ancient demonstratives) and the form without deictic particles have developed into independent pronouns (full pronouns) and agreement affixes respectively. However, this too merits further research.

4.9 *The Structure of Phi-features*

This section deals with the structure of Phi-features. In (6.1), some general points will be discussed. In section (6.2), an attempt is made to present the structure of Phi-features in the languages in question.

4.9.1 *Some Points on the Structure of Phi-features*

Phi-features are taken to be those involved in predicate-argument agreement, typically person, number and gender. In the Saho and Tigrinya data indicated above, we have seen affixes which indicate subjects. An affix could be a suffix, a prefix or a discontinuous morpheme. The latter is an agreement with a single argument by distinct parts of the verb as can be illustrated below. It is assumed that morphemes created by fission contain only a subset of the features contained in the original morpheme. Some linguists assume that features like person and number head separate projections. They assume that there is ideally a one-to-one correspondence between morphosyntactic features and terminal nodes, i.e., there are separate projecting nodes for individual inflectional categories such as person, number and gender. However, this view is not shared by all. According to Fuß (2005) and others the possibility to insert dissociated morphemes post-syntactically entails that not every morpheme (and

hence a feature) enters the syntactic computation as a projecting head. If we agree that a purely morphological operation such as fission existed, Fuß (2005) and others argue that the syntax must at least sometimes operate on bundles of morphosyntactic features which can then be split into several morphemes by post-syntactic morphological operations. Scholars like Fuß believe that fission only gives a false impression that this split of inflectional features/heads is located in the syntax. This merits further research. In this chapter, however, Fuß's (2005) view is adopted. According to Noyer (1997) and Siddiqi (2009), the Tamazight Berber examples in (5d-e) illustrate a morpheme split. According to them, the examples in (5d-e) show the agreement morpheme splits into three positions of exponence which are realized by successive fission of one Agr-morpheme and insertion of the Vocabulary items (cf. Noyer 1997; Siddiqi 2009 for more details).

(5)   a.   ti-säbk-u   Tigrinya

             2-preach-mpl

             'you preach'

        b.   t-eerheg-in   Saho

             2- know-pl

             'you(2pl) know'

        c.   yi-zrq-uu   Hebrew

             3-throw-pl

             'they will throw'

                                          (Halle 1997: 432 quoted in Harbour 2008: 185)

        d.   t-dawa-n-t   Tamazight Berber

             2-cure-pl-fem.

             'you (pl.fem) cured

        e.   [2]   ⟷   /t-/

             [pl]   ⟷   /-n/

             [fem]   ⟷   /-t/

                                          (Noyer 1997 quoted in Siddiqi 2009: 25)

The examples in (5a-c) are taken from Tigrinya, Saho and Hebrew (cf. Harbour 2008: 185-189 for more discussion on the Hebrew example) respectively. In every sentence in (5a-c), the left italicized morpheme gives the person of the agreeing argument while the right flank shows number. The fact that the discontinuous agreement obeys a "person left, number right" is not new (cf. Trommer 2002; Harbour 2008). However, linguists appear eager to know the whys. Harbour (2008: 186-7) adopts a general frame work of distributed morphology from Halle and Marantz (1993, 1994). According to this view (adopted by Harbour 2008) phonological content (vocabulary items) is introduced (vocabularization) to syntactic structures only once syntactic computation has ceased. He also refines distributed morphology in the following two ways. First he proposes a syntactic structure as in (6):

(6)   φ
             |
             π
             |
             ɯ

<div align="right">(Harbour 2008: 187)</div>

According to Harbour (2008), φ is just a category label. It is used for expositional clarity (so that it becomes obvious where in the structure the φ-features are) while the real syntactic positions are π (person) and ɯ (number).

Furthermore, he (Harbour 2008) assumes that vocabularization occurs cyclically, root out; that is, if X and Y are syntactic entities such that Y dominates X, phonological content is inserted into X before it is inserted into Y. If the φ-set is vocabularized by a single phonological string, X, then the syntactic structure $[φ (Y)]$ is linearized straightforwardly as $[X \rightarrow Y]$ (the arrow is borrowed from Harbour's (2008) formulation of linear precedence and adjacency). In cases of multiple sub-φ exponence, however, we do not always get pure (left-to-right) linear string (cf. Harbour 2008). Observe the following:

(7)   X → Y
       |
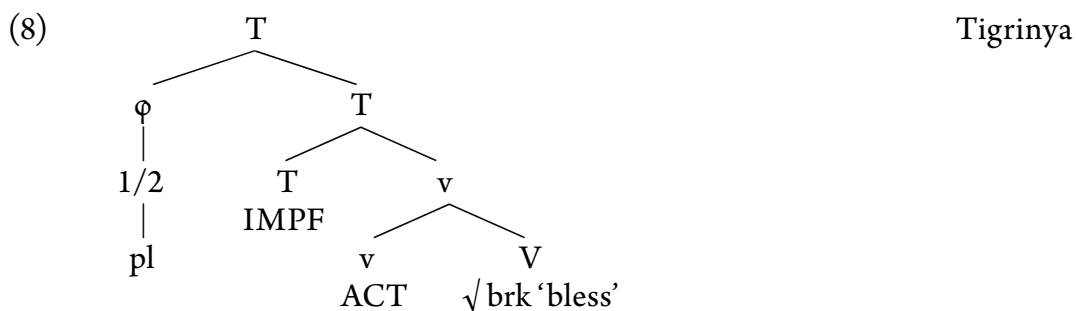   Z

<div align="right">(Harbour 2008: 187)</div>

In cases of multiple sub-exponence, i.e., when the subparts of (6) are vocabularized independently, (e.g. by X and Z), the result is that of (7) and not a simple (left-right) linear string. Discontinuous agreement responds to the need to (i) linearize such structures and (ii) preserve ordering and adjacency relations imposed by the syntax and the φ-structure. Thus, Harbour (2008) proposes that (a) agreement can be discontinuous when

there is multiple sub-φ exponence (b) the order person-left number-right arises from the internal syntax of the φ-set and (c) cyclic root-out vocabularization forces flanking.

4.9.2 *The Structure of Phi-features*

According to Harbour (2008: 188), "Syntax deals in whole φ-structures and determines their positions with respect to other syntactic material". Moreover, he also says: "Postsyntactically, vocabularization may deal in sub-φ-features and determines the position of different pieces of inflection with respect to other phonological material". To illustrate, Harbour takes the discontinuous (5c) and the simplex *ni-zroq* 'we will throw' ((1pl) -throw) from Hebrew. In Tigrinya we can have similar examples. Adapting Harbour (2008), we may have the structures in (8) and (9) below for Tigrinya discontinuous agreement *ti-barix-u* 'you (2ms) bless' (see also 5a above) and for Tigrinya simplex *ni-barix* 'we bless' (1pl-bless).

(8)   T   Tigrinya

```
(8)                T                              Tigrinya
              /         \
            φ            T
            |          /    \
           1/2        T       v
            |        IMPF    /   \
            pl              v      V
                           ACT   √ brk 'bless'
```
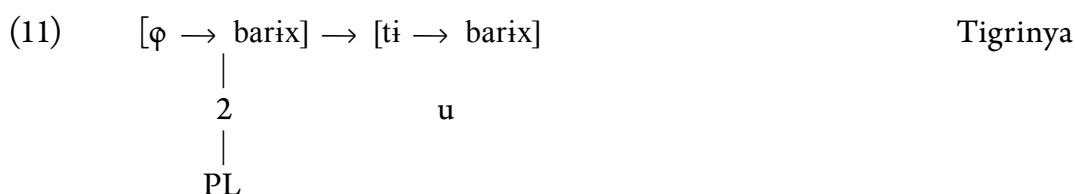
Vocabularization proceeds root out. In our case it begins at the verb root V and can reach φ-1/2-pl. Leaving aside the complexities of the verb morphology of the language in question, it can be noted that the φ' s sister is realized as *barix* (when ungeminated k is preceded by a vowel, we see *k* > Harbour 2008 in Tigrinya). Observe also the following:

```
(9)        [φ[barix]]                             Tigrinya
                |
               1/2
                |
               PL
```

Adapting Harbour (2008), let us consider the first person plural first. When φ is targeted for vocabularization we can see from (10) below that the syntactic sisterhood relation is immediately transformed into one of linear adjacency.
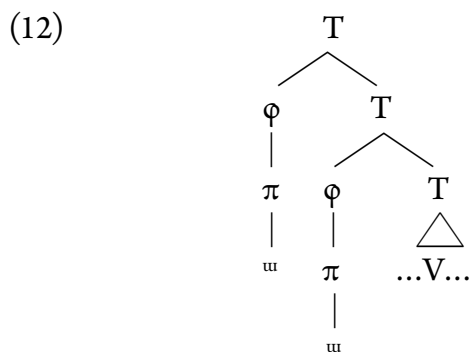
(10)   [φ ⟶ barɨx]   Tigrinya
                 |
                 1
                 |
                 PL

The φ-set-1-pl, has a single exponent, */nɨ/*. The result of the insertion into
(10) is *nɨ-barɨx* and clearly shows a perfect linear string. In the second per-
son plural, however, matters are not so straightforward (cf. Harbour 2008
for more details). Nonetheless, sisterhood is immediately transformed into
linear adjacency into which two vocabulary items are inserted. These are
[φ-2] ⟷ */tɨ-/* and [PL] ⟷ */u/*.

(11)   [φ ⟶ barɨx] ⟶ [tɨ ⟶ barɨx]   Tigrinya
                 |
                 2   u
                 |
                 PL

In (11), the result of vocabularization is a frayed string, not linear. How-
ever, (11) can be linearized. As *tɨ-* dominates *-u* hierarchically, the former
must precede the latter. As a consequence, this rules out (a) the order *u-tɨ-
barɨx* (number-person-verb) and (b) *tɨ-u-barɨx*.

     The order tɨ-barɨx-u respects both the dominance/linear precedence
of *tɨ-* (person) over *-u* (number) and the earlier established adjacency.
Thus, regular phonology yields the surface form *tɨbarɨx-u*.

     As indicated earlier, discontiguous agreement arises when multiple
sub-φ exponence creates a frayed string. The internal structure of the
φ-set gives the order person-left number-right. These can be the answers
to the questions "why is agreement sometimes discontinuous?" and "why,
when agreement is discontinuous, is person left and number right?". With
these in mind, we may raise another question of why the double discon-
tinuities flank. The reasons for flanking follow from devices called upon
earlier (cf. Harbour 2008: 191 for the structure in (12):

(12)   T
                     ⟋   ⟍
                  φ   T
                  | ⟋   ⟍
                  π   φ   T
                  | | △
                  ɰ   π   …V…
                        |
                        ɰ

Since, as we have seen above, vocabularization proceeds cyclically root-out, it starts, in our case, at V and finish at the higher φ-set. Tentatively disregarding the higher φ-set (cf. Harbour 2008), the structure to be linearized is similar to the Tigrinya tree (8). As a result, vocabularization and linearization of the higher φ's sister yield:

(13) $[\varphi\ [\pi \longrightarrow V \longrightarrow ш]]$
                     |
                     π
                     |
                     ш

(13) is structurally identical to (9): this gives $\pi \longrightarrow \pi \longrightarrow V \longrightarrow ш \longrightarrow ш$ (cf. also Harbour 2008: 191). Hence, Harbour (2008) argues that flanking follows from the cyclic application of the linearization procedure already established. However, his work does not appear conclusive, In fact, he concludes his article by expressing his desire that his data and questions in his work can help to stimulate further research on the issue.

4.10 *Syncretism and Phi-features in Saho and in Tigrinya*

Syncretism can be defined as the representation of different combinations of morphosyntactic values by the same form. In English, for instance, (1sg) and (3sg) of verb to be syncretize and so do (2sg), (1pl) and (3pl). For the (1sg) and (3sg), we have was as the past tense form of the verb to be. For the (2sg), (1pl) and (3pl) too, there is the word were as the past tense form of the verb to be. Syncretism occurs when a single vocabulary item (e.g. gender element u) realizes more than one combination of features in a syntactic terminal node.

According to Williams (1994), dative and ablative case in Latin, always synchronize in the plural, regardless of what the actual suffix is (cf. also Manzini and Savoia 2001 among others). According to Harley (2008), this is a metaparadigm. Metaparadigm is a generalization over the shape of a given type of paradigm within a language. A syncretism that holds in a metaparadigm is, according to Harley, metasyncretism. It is a syncretism which, regardless of the particular forms or affixes used in any particular instance of the syncretism, holds for a particular set of features in a language. Hence, the plural ablative/dative syncretism in Latin case ending are, according to Harley (2008), apparently metasyncretism.

In the literature (cf. Adger and Harbour 2008: 24-5 among others), it is indicated that π (person) and ш (number) are not equally marked.

In some languages (e.g. Hebrew finite verbs), the verb forms agree for person, number, and gender, while in other languages the verb forms agree for number and gender without person. However, none agrees for person without number and gender (cf. Harbour 2008 among others). According to Harbour (2008: 194), one cannot have person without number, just as one cannot have C without T. However, he says, it is possible for number to project without person (just as it is possible for T to project without C). Moreover, Adger and Harbour (2008) indicate that number and gender distinctions are frequently lost with respect to person, but in opposite fashions. If a language makes number distinctions for some persons only, they will be either 1st persons or 1st and 2nd persons. If, on the other hand, a language makes gender distinctions for some persons only, they will be 3rd persons or 2nd and 3rd persons. However, these generalizations are tendencies; not universals (cf. Adger and Harbour 2008: 24).

In the case of Saho and Tigrinya, we have seen above that the verb forms and the independent pronouns mark their second person by *k* or *t* or both *k* and *t*. Moreover, we can also see they indicate number by *n* (in the case of Saho and *n* or *n* > m in the case of Tigrinya. Nonetheless, Saho verb forms and independent pronouns do not have morphemes to make gender distinctions in the second person forms. As illustrated in Table III and Table II, Saho verb forms and independent pronouns do not distinguish between second person masculine singular and second person feminine singular, or between second person masculine plural and second person feminine plural. In the case of Tigrinya, however, gender distinctions can be made. But we can find an amalgam of number and gender. To illustrate this, consider Table VI, repeated below:

P./N./G.	Tigrinya			
	Perf. A	Imperf. A	Pref. C	Imperf. C
2ms	qätil-ka	tɨ- qättɨl	baräx-ka	tɨ-barɨx
2fs	qätil-ki	tɨ- qätl-i	baräx-ki	tɨ-barɨx-i
2mpl	qätil-kum	tɨ- qätl-u	baräx-kum	tɨ-barɨx-u
2fpl	qätil-kɨn	tɨ- qätl-a	baräx-kɨn	tɨ-barɨx-a

Table VII

In the perfective form, person is marked by *k*, while gender is marked by primary gender markers *-a* (for masculine) and *-i* (for feminine). In the plural (perfective), we see the forms *-kum* and *-kɨn*. The forms *-kum* and *-kɨn* are also realized as *-kumu* and *-kɨna* respectively whenever they are followed by object suffixes as in (14a-d):

(14)   a.   barix-kum   b.   barix-kum-u-ni   Tigrinya

          bless-2mpl   blessed-2mpl -u- me

          'you blessed'   'you blessed me'

       c.   barix-kɨn   d.   barix-kɨn-a-ni

          blessed-2fpl   blessed 2fpl- a-me

          'you blessed'   'you blessed me'

In (14a) and (14c) we have (2mpl) and (2fpl) agreement morphemes which indicate subject. In (14b) and (14d), however, there are morphemes which indicate subject and object. Between the subject indicating morphemes and the object indicating morphemes, we observe secondary gender markers -*u* and -*a* which are actually part of the former. Hence, we can see that the secondary gender markers can be surfaced whenever they come before object suffixes. As we know, Proto-Semitic short *i* can correspond to *ɨ* in Eritrean and Ethiopian Semitic languages. Thus, it is obvious that Tigrinya -*kɨn* corresponds to *kina* 'you (2fpl)' in other ancient Semitic languages. Taking other Semitic languages into account (as in the case of *-*kanu* > -*kunu* [2mpl] for Akkadian and -*kanu* [2mpl] for Ugaritic), I assume -*kanu* > -*kunu* (by regressive assimilation which is very common in Tigrinya) and -*kunu* > -*kumu* (n > m) and finally -*kumu* > -*kum*/-*kumu*. To summarize, we see that in the perfective *k* marks 2nd person while number is indicated by *n* or *m*. The secondary gender markers -*u* (masculine), and -*a* (feminine) may not always be overtly seen. However, the primary gender markers may serve the purpose.

    In the perfective form of Tigrinya, the φ-features are suffixes. But in the imperfectives, they are not limited to suffixes. The prefix *t*- indicates 2nd person and corresponds to 2nd person marker *k* in the perfectives. In the 2nd person masculine singular, the primary gender marker -*a*, which corresponds to primary masculine gender marker in the perfective, is deleted. However, the primary feminine gender marker -*i* occurs in *tɨ--i* (you[2fs]). The morpheme *t*- marks second person while -*i* shows feminine gender which corresponds to primary gender -*i* in the perfective. In the plural 2nd person affixes too, we have *t*- which indicates second person. However, gender and number are marked by the originally secondary gender markers. The originally masculine secondary gender marker -*u* and the originally feminine secondary gender marker -*a* indicate both gender and number. Hence, *tɨ--u* and *tɨ--a* mark (2mpl) and (2fpl) respectively. Hence, we find an amalgam of number and gender in the imperfective forms. The originally secondary gender marker is used to indicate both gender and number. But there is no number marker different from that of gender. In the imperfective, Tigrinya appears underspecified for number. I assume this is syncretism.

We have seen above that Saho agreement affixes are underspecified for gender. As such a widespread syncretism cuts across different vocabulary items (VIs), I assume it is metasyncretism. Tigrinya syncretizes number in the imperfective while Saho syncretizes gender in the perfective and in the imperfective. I assume that the syncretisms in the languages in question are metasyncretisms.

We have seen above that in the perfective and imperfective verb stems of Saho and Tigrinya, 2nd person is indicated by *k, t* or both (cf. Table V and Table VI). Moreover, argeement affixes also occur in the independent second person pronouns of Saho and Tigrinya. In the independent pronouns too, 2nd person of both the languages is indicated by *t*. The examples thus far given show that number in independent pronouns, just like in the verb stems, is also marked by *n* in Saho and by *n* and *m<n* in Tigrinya. Observe the following:

P./N./G. of Tigrinya	Sub. Ind. Pronouns of Tigrinya	Sub. Ind. Pronouns of Saho	P./N./G. of Saho
2ms	ʔan-ta	(ʔ)atu	(2s)
2fs	ʔan-ti		
2mpl	ʔan-tum	(ʔ) atin	(2pl)
2fpl	ʔan-tɨn		

Table VIII

We can also see that in Tigrinya, primary gender is marked by *-a* in the masculine and by *-i* in the feminine. In the plural, the secondary gender markers, *-u* and *-ä < -a* are not usually overtly seen. In the singular, the primary gender markers occur immediately after the person marker *t-*. In the plural too, we find the gender markers in the same position. In the plural forms, however, we assume, *ʔantanu > ʔantumu > ʔantum* for the masculine and *ʔantina > ʔantɨn* for the feminine and hence we see *a > -u* in the former and *i > ɨ* in the latter (cf. also the discussion in section 4.7.1 above). But in the case of Saho, gender is not marked. As in the case of verbs, Saho syncretizes gender in the second person independent pronouns too.

4.11 *Conclusion*

Tigrinya and Saho belong to Semitic and Cushitic languages respectively. Both Cushitic and Semitic are members of Afro-Asiatic languages.

In this chapter, gender, number and second person morphemes in Saho and in Tigrinya are discussed. In this chapter, I have focused on sec-

ond person perfective and imperfective subject verbal affixes and also on the second person subject independent pronouns of the languages in question. In both Saho and Tigrinya, we observe that second person is indicated by *t* and *k* or either *k* or *t* in the verb stems and in the independent subject pronouns. We can also see that in the perfective and in the imperfective verb stems of Saho, in the perfective verb stems of Tigrinya and in the independent subject pronouns of both languages, number is indicated by *n* in Saho and by *n* or *n > m* in Tigrinya. In Tigrinya, the originally secondary gender markers indicate gender and number in the imperfective verb stems, while in the perfective the secondary gender markers are frequently deleted. In the imperfective verbs of Tigrinya, the Phi-features are marked by prefixes and suffixes. The person markers are prefixes, while the gender/number morphemes are suffixes. In the perfective forms, however, the Phi-features are marked by suffixes.

In Saho, the Phi-features are indicated only by suffixes in class II verbs. In Class I verbs, however, they are indicated by prefixes and suffixes.

In Saho class II verbs, the prefixes indicate person while the suffixes mark number. In Tigrinya the prefixes indicate person while the suffixes mark number and/or gender. The results are in line with Harbour (2008) because discontinuous agreements respond to the need to (i) linearize such structures and (ii) preserve ordering and adjacency relations imposed by the syntax and the Phi-features. In this sense, I assume the data from Saho and Tigrinya correspond to the theory in the literature.

Tigrinya syncretizes number in the imperfective verb stems, while Saho syncretizes gender in the perfective and imperfective forms of verbs.

In the literature, subjects may be assumed to be former topics. The development of former topics into subjects can go hand in hand with the development of pronouns/clitics into agreement affixes. The data in the languages in question clearly show that the pronominal agreement affixes and the independent pronouns are related. I assume the second person independent subject pronouns of the languages in question are derived from an ancient deictic element han and a pronoun such as tina or kina composed of person, number and/or gender features (cf. also Satzinger 2004 for the derivation of pronouns from the non-subject pronominal forms).