INFLECTION IN TOPOSA, A VSO LANGUAGE IN MORPHO-SYNTACTIC THEORY

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This paper presents a morpho-syntactic approach to inflection as suggested under the new Minimalist Program (Chomsky 1993/1995). The language under consideration is Toposa, an Eastern Nilotic language which is highly inflectional and derivational. It belongs to the Teso-Turkana subgroup of Eastern Nilotic and is spoken in the south-eastern corner of Southern Sudan. Firstly, the paper deals with inflection in a VSO language and suggests that the order of the tense and agreement heads is alternated. The change in the order of heads is morphologically motivated by the tense tonal features of the language. Secondly, it makes a choice between the agreement analysis and the subject incorporation theory, showing that the latter theory reflects more accurately the reality of Toposa data. Thirdly, it considers the role of the overt NP in the subject incorporation theory. It concludes with the claim that the occurrence of personal pronouns carries a [+focus] feature.

1. Introduction

This paper discusses inflection in a VSO language and proposes that the order of the tense and agreement heads has to be changed, which has also been suggested by Ouhalla (1991) as a typical property for VSO languages. In Toposa the alternation of the heads is motivated by the morphological features of a tonal tense suprafix. Thus, the assumption that all VSO languages have an underlying SVO structure held, by Edmonds (1985), Koopman (1984), Creider (1989), and Carnie & Guilfoyle (2000), is refuted.

The paper considers compares two types of analysis: the agreement analysis suggested by Rizzi (1982), Chomsky (1982) and Jaeggli and Safir(1989) versus the subject incorporation analysis (Schröder 2002). It will be argued that the subject incorporation analysis is the better analysis for Toposa, leaving the overt NP to be defined differently from the syntactic subject of the sentence.

Next, the paper talks about the topic analysis of the overt NP subject according to Kiss (1995) and Payne (1995). However, it will be shown that the overt NP is a participant referent in a syntactic discourse system, dismissing previous topic analyses.

The paper concludes with the observation that in the author's subject incorporation analysis the occurrence of personal pronouns carries a feature [+focus], supporting Horvath's (1995) idea of a morphologically motivated focus.

2. The Morpho-syntactic Nature of the Minimalist Program

The Minimalist Program (Chomsky 1993/95) represents a morpho-syntactic approach to syntax. Only features that are lexically and morphologically licensed[1] are represented in the grammatical structure. The new approach is still structure dependent, but breaks with the purely syntactic perspective, and incorporates morphological features that directly influence syntax, as they are so prevalent in African languages.

The basic sentence structure in the Minimalist Program, which specifically states that morphology plays a major role in languages, is the following, taken from Chomsky (1993: 7) and based on the Split-INFL Hypothesis of Pollock (1989):

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[1] The principle of Full Interpretation states that 'every element of PF and LF, taken to be the interface of syntax (in the broad sense) with systems of language use, must receive an appropriate interpretation—must be licensed in the sense indicated' (Chomsky 1986:98). In other words, the feature-based approach of the Minimalist Program takes care of the elements in building feature-carrying heads.

(1)
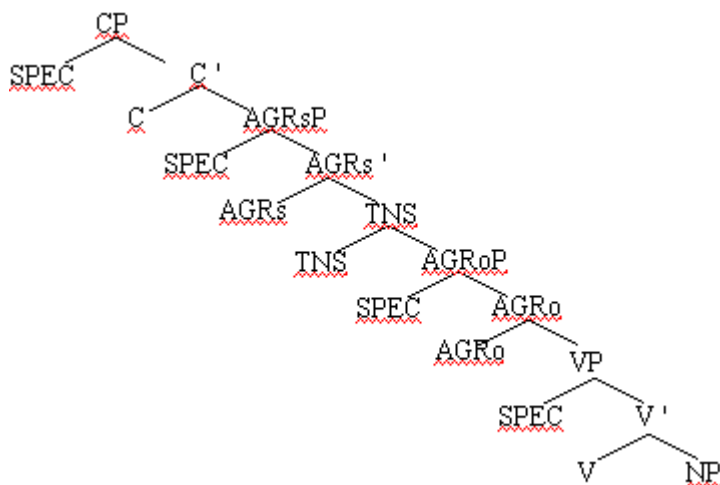
The various function-changing morphemes get their own head each, like agreement subject head (AGRs) and agreement object head (AGRo). They are regarded as bundles of features, containing gender/number/person features. The new model is feature driven.

3. Inflection and Tense in Toposa

The basic sentence structure of Toposa is VSO, in which the verb heads the sentence in all intransitive and transitive constructions and all complex sentence structures. See the following examples of an intransitive (2a), a transitive sentence (2b) and a complex sentence in (2c):

      (2a)   *È- kèr- í   nyí- kókû.*[2]
                3SG-run-IMP D/SG-child/NOM
                The child is running.

      (2b)   *È- mín -á   nyá- bérù   nyí- kòkû.*[3]

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[2] Phonetically, the tones on *nyikoku* 'child' in the nominative case are high-mid-fall (HMF) before a pause and high-mid-low (HML) elsewhere (see example 6b) further below, which are best interpreted as underlying HHF and HHL respectively. (Note that not all underlying HHL patterns on nouns with CVCV nouns are realized as HML though).

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3SG-love-RFL F/SG-woman/NOM D/SG-child/ACC

The woman loves the child.

(2c) *Tó- tûk   nyé- bù   ŋá- kílê*
      SEQ-take M/SG-hyena/NOM F/PL-milk/ACC SEQ
      kí-ŋìt nàbó kwè
      ask   again jackal/ACC
      Hyena took a mouthful of milk, he asked Jackal again.

As Toposa is a verb-initial language, the intransitive sentence (2a), the transitive sentence (2b), and the co-ordinate sentence construction (2c) do not fit into the basic sentence structure of (1). If the subject has to move into the specifier of AGRs as in (1), the subject will head the sentence and does not result in the required verb-initial word order. To produce the desired VSO structure, a change in the order of heads would have to take place, so that the verb has to move for feature checking to TNS as its last step, thus creating a VSO word order.

The normal Toposa verb is marked for tense and aspect. The tense system follows the typical past and non-past type found in many African languages. Tense is marked by the tone pattern that extends over the entire verb and varies according to verb class, person, number, and tense[4]. In addition to the tone pattern, the tense prefix a-[5] occurs in the third person singular and plural past:

(4a) *Ì- múj-ì   íŋès̱i̱   nyá- kírîŋ.*
      3SG-eat- IMP   he/NOM   F/SG-meat/ACC
      He is eating meat.

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[3] The tones on nyaberu 'woman' in the nominative case are *nyá- bérû* (HMF) before a pause, and *nyá- bérù* (HML) elsewhere (except in situations where the following context raises the final tone to extra high (*nyá- bérú))*.

[4] Non-past is the unmarked tense and past is the marked one.

[5] Note how the person agreement prefix *i-* in (4a) changes to *e-* in (4b), indicating that *i-* 'third person' and *a-* 'past tense' have become fused together, resulting in *e-*. For a fuller statement of the person agreement system across verb classes and tenses, see footnote 11.

(4b) *È-mùj-í*   *íŋèsi*   *nyá- kírîŋ.*
3SG-eat- IMP   he/NOM F/SG- meat/ACC
He was eating meat.

(4c) *È-mùj-étè*   *iŋèsi*   *nyá-kírîŋ.*
3SG-eat-IMP/PL they/NOM   F/SG-meat/ACC
They were eating meat.

Note how the tone pattern changes between third person singular non-past (4a), which has the tone patterns LHL and LLH in past (4b) and (4c)[6]. Additionally, Toposa has two aspects: imperfective and perfective. The imperfective aspect is indicated by the suffix -i in the singular and -e in the plural, as shown (4a) and (4b) and (4c)[7] . The perfective aspect is indicated by the suffix -iti throughout[8]:

(5a) *É- múj-îti*   *áyòŋ*   *nyá- kírîŋ.*
1SG-eat- PER   I/NOM   F/SG- meat/ACC
I have eaten meat.

(5b) *È- mùj-îti*   *áyòŋ*   *nyá- kírîŋ.*
1SG-eat- PER   I/NOM   F/SG- meat/ACC
I had eaten meat.

The verb is always inflected for tense and aspect. Both the tonal tense features and the morphological aspect features are checked under TNS[9]. As

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[6] Dimmendaal (1995) claims that the tonal difference in the above paradigm—here referred to as past and non-past—is related to an imperfective/perfective tonal contrast in Eastern Nilotic.

[7] The imperfective aspect has an allomorph –e before the plural suffix –te, used in second and third person plural. First person plural uses the suffix -i with the plural suffix-o.

[8] In the first person plural the suffix –iti ~ -it is followed by the first person plural suffix –ae, in second and third person it is followed by the plural suffix –o. The voiceless vowel is elided in both plural forms (and other suffix combinations).

[9] Past tense always marks events that are past and have ended. Non-past is normally used for events that are present or present continuous, and sometimes future (although future can also be marked more distinctly by the auxiliary *edikino*).

the new generative approach is feature based, in a language with several morphological features the question arises: how many heads does a sentence structure have in order for it to be grammatical?[10].In light of a one-feature-one- head approach, Toposa would have to build a distinct head for aspect. However, as the aspects are either used in the non-past or in the past (see (4) and (5)), and the tone patterns of past and non-past do not change for the aspect, thus the tone and the aspect can be checked under one head.

The person agreement system in Toposa has the morphemes given in footnote 11, when the verb agrees with the subject of the sentence, as in:

(6a)   *È-   pèr -í   nyí-   kókû.*
         3SG/SUB-sleep- IMP   D/SG- child/NOM
         The child is sleeping.

(6b)   *È-   màs- í   nyí-   kókù   ŋá-kílê.*
         3SG/SUB-drink-IMP   D/SG- child/NOM F/PL-milk/ACC
         The child is drinking milk.

The agreement prefix e- 'he/she/it' refers to the subject of the intransitive sentence (6a) and the subject of the transitive sentence (6b)[11]. Inflectional features, tense/aspect features and agreement features are all checked under their respective inflectional heads, which results in the typical SVO sentence structure laid down in (1) after verb movement, which however does not reflect the actual VSO word order of examples (2a) and (2b).

An easy solution would be to go back to an earlier concept held by Edmonds (1985), Koopman (1984), den Besten (1985), Creider (1989), Carnie & Guilfoyle (2000) and others and claim that all VSO languages have an underlying SVO structure, and result in the desired VSO word order by verb movement. However, further insight, like that offered by the Mirror Principle (Baker 1988: 13), might help to find a more elegant solution. The Mirror

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[10] There are instances in the language, when the verb agrees with the object of the sentence (see Schroeder [2002:38]).
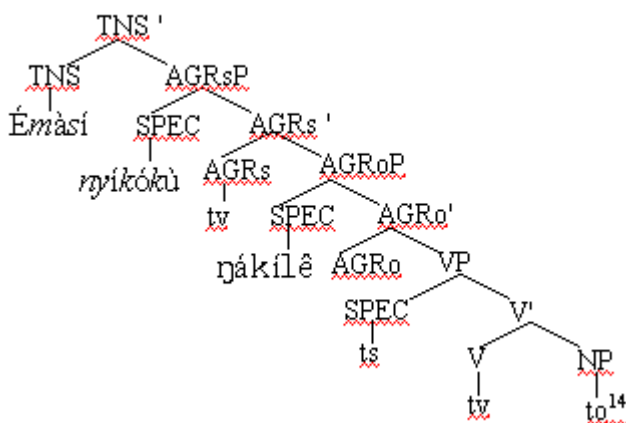
[11] The basic person agreement prefixes appear in TO-class verbs in the non-past tense (all in the order of 1st/2nd/3rd person SG and 1st/2nd/3rd person PL): *a-, i-, e-, e-, i-, e-*. In KI-class verbs, those prefixes are fused with a petrified root-initial *i-*, resulting in *e-,i-, i-, i-, i-, i-*. In the past tense, the tense prefix *a-* (which exists only for 3rd person SG and PL) is additionally fused with the person agreement prefix, resulting in *a-, i-, a-, e-, i-, a-* TO-class verbs and *e-, i-, e-, i-, i-, e-* for KI-class verbs.

Principle states that the succession of the verbal affixes determines the order of the arguments in a sentence, so that the order of the heads and the arguments in a sentence depends on the order of the verbal morphemes.

This leads to the question as to which point tense needs to be checked. As the tonal pattern extends over the entire verb, and as a suprafix, logically tone should supersede the affixation and should be checked last. The segmental morphemes would be checked first then. Consequently, one can conclude that Toposa has the agreement features checked first, and the tone of the verb is checked last, after the agreement feature. Thus the tense head TNS precedes the agreement head AGRs, and the checking process results in the desired VSO order.

This solution is supported by Ouhalla (1991:105-110), who suggests that one of the properties of VSO languages is that AGRs is checked first, i.e. TNS precedes AGRs, which results in the following sentence structure for Toposa:

(7)

TNS '
TNS   AGRsP
Émàsí   SPEC   AGRs '
        ŋyíkókù AGRs   AGRoP
                tv   SPEC   AGRo'
                        ŋákîlê AGRo   VP
                                SPEC   V'
                                ts   V   NP
                                        tv   to[14]

The verb moves from its position in the sentence first to AGRs/AGRs' to check its AGR features, and then to TNS/TNS' to check its TNS features. The VSO word order is kept.

The movement of the NP is determined through nominative case-checking to the specifier of AGRsP, and through accusative checking to the specifier of AGRoP. After the verb and NP movements are completed, the word order results in VSO.

4. Subject Incorporation in the Verb

So far it has been said that Toposa has inflection agreement that is conceptualised in the AGRs head. However, there are two ways to interpret the agreement system of a language. One interpretation regards the subject (i.e. the overt NP of a sentence) as dropped, and the subject features as being recovered by the rich agreement of the verb. This view is supported by Rizzi (1982), Chomsky (1982), and Jaeggli & Safir (1989) among others. The sentence then has an underlying pro. This interpretation is called the agreement analysis. The other possibility views the agreement prefix as the incorporated subject, also called pronomial analysis, which says that the sentence is complete without the overt NP. Toposa fits the second version, as the examples in (8) are perfectly grammatical without the subject:

(8a)   *È-*   *kèr-í*   *nyí-kókû.*
       3SG-   run-IMP D/SG-child/NOM
       He is running.

(8b)   *È-*   *mín-á*   *nyí-*   *kòkù.*
       3SG-   love-RFL D/SG-child/ACC
       He/she loves the child.

The subject pronoun is integrated into the verb as a subject prefix. As the structure of the sentence is built on feature licensing, the specifier head position of the VP and the AGRs is not built, as the sentence has no overt subject. The verb checks its subject prefix under the head of AGRs, see the following tree:

(9)
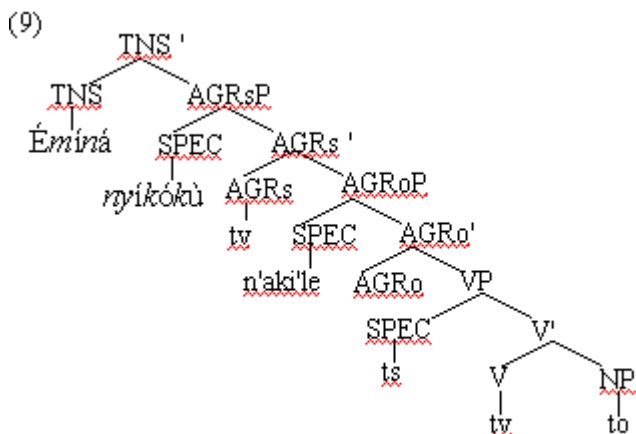
If the subject pronoun is always incorporated in the verb, the occurrence or non-occurrence of the subject NP has logical consequences. The overt NP must have an additional function besides being the subject of the sentence.

In Toposa the occurrence of the overt subject has a participant/reference function. The participant reference analysis agrees with the occurrence of a subject in complex sentences and discourse.

(10)   S1 *[Ani   i- ir- ar -i   Locikio   ŋa-kiro*
            when 3SG-hear-ABL-IMP Locikio   F/PL-matter

       ka nya- ate,]   S2[ta-   nap-   un-i,]
       of   F/SG-cow   SEQ- charge-ALL-RFL

       S3 [*ku- cum   nya- ate,]*
              SEQ-spear F/SG-cow

       S4 [*ta- ar   jik*.][12]
              SEQ-kill completely

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[12] Note that the prefix is represented by two different forms. There are the person agreement prefixes *a-, e-, i-* in non sequential verbs, and there are the narrative-sequential prefixes *to-~ta-* (for TO-class verbs) and *ki- ~ ku-* (for KI-class verbs) in narratives.

> When Locikio heard the matters (= words) of the cow, he charged, he speared the cow, he killed [it] completely.

The complex sentence (10) introduces the overt NP *Locikio* in the first sentence as it is the main referent of the complex sentence structure. In the subsequent sentence the NP is dropped and is referred to by the incorporated subject pronoun. This pattern is also found in larger chunks of discourse as the main participants are introduced in the subject position of VS and then referred to as subject prefixes. The reference function of other NPs that are not the subject is described in detail in Schroeder (2002).

Another way of looking at the overt NP would be to say that it has a topic function. Focus and topic can directly influence the word order of a language. Kiss (1995) and Payne (1995) suggest that the syntactic level is not always enough to explain the word order of a language and that in some languages discourse considerations affect the word order of a sentence directly. Similarly, Kidwai (1998) suggests that the domain discourse has a direct impact on the encoding of focus and topic of a clause. She further suggests that the domain discourse is integrated into the interplay of convergence of spell-out into LF and PF in the Minimalist Program.

The term topic, however, is not always clearly defined and has been characterised according to several schools and approaches. The most prominent definition of the term topic is that 'topic denotes the function of the constituent that the sentence is about' (Kiss 1995: 7, Payne 1995, Comrie 1989, Dixon 1994, Lambrecht 1994). The topic is thus identical with the subject of predication, as this denotes what the sentence wants to talk about (Rothstein 1983, Wiesemann 1996). However, other authors like Payne (1995: 129) extend the definition of the term 'topic' and do not only identify topic with subject, but also talk about a topicworthiness that ranges between subjects and objects, agreement marking, personal pronouns and human, animate and inanimate NPs. These different categories are put on a scale,

and the topicworthiness[13] moves from left to right, while the constituents put on the left show more topicworthiness than the inanimate NP's placed on the right. This hierarchy is also known as the 'agentivity hierarchy' or 'animacy hierarchy'.[14]

This paper does not apply the topic function to the overt NP, but rather keeps the grammatical function of the overt NP as a discourse referent[15] (see also Schröder, 2002, p.74).

5. Pronouns with [+ focus] Features

The usage of personal pronouns in Toposa is very restricted. As the subject prefix on the verb is interpreted as an integrated subject, the sentence without the overt pronoun is the norm in Toposa. So, any occurrence of personal pronouns carries a [+ focus] feature.

As the subject pronouns are marked on the verb as prefixes, the principles of Economy and Full Interpretation stipulate that an element is allowed to appear at PF and LF only once in order to be grammatical. As the pronominal subject appears already as a prefix at PF and LF [16], it can only appear again at PF and LF if it carries an extra feature. Consider the following example:

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[13] Comrie (1989:198) suggests that what is explained in terms of animacy hierarchy distinctions such as pronoun, non-pronoun, proper name and common noun do not directly reflect animacy, but might be better explained in terms of topic worthiness.

[14] Payne (1994:129) remarks that 'agentivity hierarchy' and 'animacy hierarchy' are not really accurate terms, as they have nothing to do with animacy or agentivity. Verb agreement, pronouns, and proper names for example can refer to biologically animate or inanimate, agentive or non-agentive entities.

[15] Topic orientation was neglected in Generative Grammar for a long time. Since its very beginning (1957) Generative Grammar had mainly dealt with syntactic relations at clause level. A clause was defined through the phrase structure, the grammatical subject, the VP dichotomy and the c-commanded single operator that also functioned as the landing site for wh-movements. So, little attention had been given to pragmatic orientation for clause typology or language typology in GB. Kiss (1995) departed from this tradition and suggested to consider focus and topic for determining the typology of discourse oriented languages.

[16] The occurrence of personal pronouns falls under a focus principle, which was formally stated in Schroeder (2002:82).

11)   S1 [*Nya- cepaaran   ki-   la-   a   nye-ŋatuny*
         F/SG-another day   SEQ- walk- ABL   M/SG-lion/ACC

na- moni,   nya- ki- rap   ŋa-   kee-moogwa,]
S2 [ku- rumF/LOC-bush   F/SG-DER-search   F/PL- his-food/ACC
SEQ-catch

iŋesi_   nya -koli_.]
S3 *[Ki- petepet – aki_ iŋesi_,]*   bala
   SEQ-kick.hard- BEN he/NOM saying

«A-to-   pud!»
 1SG-SEQ-escape

One day Lion walked through the bush to search for his food, a trap
caught him. He kicked very hard saying 'let me get out!'

Note the occurrence of the third person singular pronoun in S3 of (11). The
nominative subject *nyngatuny*, 'lion', of S1 is the referent of the complex
sentence structure and is marked as a subject prefix on the verb in S3.
However, as the personal pronoun ŋ*esi* occurs in S3, it carries the [+ focus]
feature. The referent 'lion' is identified again in the form of a personal
pronoun. Because the personal pronoun carries the [+ focus] feature, a focus
head is built for the focus personal pronoun to be feature-checked. See the
following tree diagram, which represents the example (11) and shows the
relationship between the antecedent, the subject of S1 and the personal
pronoun subject of S3:

(19)
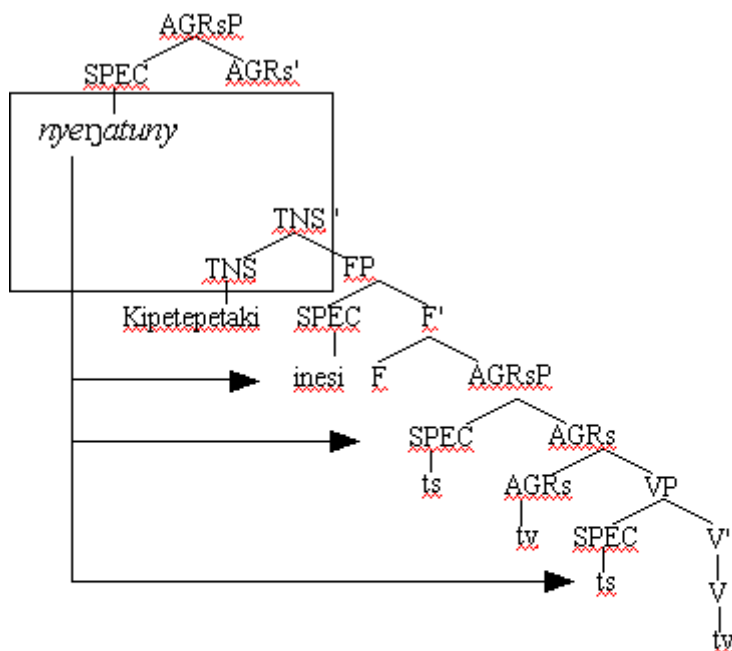
The focus that is described here is known in the literature as a focus by identification or assertive focus (Wiesemann 1996). Its characteristic is that it presupposes information, either explicit or implicit. This information is then identified and mentioned again through focus. In the case of Toposa pronouns this means that the subject prefix on the verb identifies the presupposed explicit information, which in turn is focalised or identified through the occurrence of the third person pronoun shown in S3.

Kiss (1995) points out that focus can be either VP-internal or VP-external, i.e. either the structural focus position is related to the VP, or it occurs outside the VP. In Toposa focus operates verb phrase-internally, which is demonstrated by the fact that the specifier of VP is occupied by the focused subject argument. Focus in Toposa is also related to verb

morphology, as there is a relationship between the subject prefix and the overt person pronoun (see also Horvath 1995).

5. Conclusion

The paper wanted to refute the preconceived generative concept that all verb-initial languages have an underlying SVO structure. It was shown with data from Toposa that one of the properties of VSO languages is to have tense features precede agreement features. In this way, the checking process of the Minimalist program results in a VSO language because of the reversed order of the tense and agreement heads. The head change is motivated by the tonal feature of tense, which is checked last as a suprafix. As the tense head precedes the agreement head, the verb checks the tense feature last, and the verb thus precedes the subject in the VSO order, as the subject moves into the specifier of the agreement head.

This paper also showed that some languages with subject agreement are not pro drop languages, but that the agreement prefix in them would be better interpreted as a subject prefix where the subject is incorporated into the verb, and thus no pro-drop takes place. In fact the occurrence of the pronoun carries an extra [+ focus] feature; it carries extra information. As the subject is integrated into the verb, the occurrence of the overt NP must have an additional function. It was argued that the solution would not be found at sentence level, but at the discourse level. The discourse reference function for the subject was applied to all overt NPs in subject positions, arguing against the topic function of the subject.

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