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## Co-occurrence of valence increasing processes in Lutsotso

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### Abstract

Lutsotso has valence increasing operations like the applicative, causative and instrumental. It is possible to have argument changing processes co-occurring or combining on the verb. This paper discusses the effects of co-occurrences of several derivational affixes, the constraints that determine their order and their syntactic and semantic implication on the basic SVO sentence structure of Lutsotso. The mirror principle which states that 'morphological derivations must directly reflect syntactic derivations and vice versa is applied. This principle shows that there is a certain order in which morphemes co-occur in a given derived verb. Data was collected through informal interviews, participant and non-participant observation, translation tests and texts written in Lutsotso. The study established that the Lutsotso verb consists of different morphemes expressing different grammatical meanings and that the derivational morphemes modify the syntactic and semantic structure of the sentence of Lutsotso. Further the study also established that the valence increasing operations of the applicative, causative and instrumental affect the internal argument and can co-occur in a given derived verb. Additionally, this study will contribute to knowledge by revealing the richness and internal complexity of Lutsotso language. Correspondingly, a good description of the valence changing morphology of Lutsotso will provide useful insight into syntactic theory.

**Keywords:** applicative, causative, instrumental, lutsotso, verb

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### Public Interest Statement

Gregersen (1977) observes that of all aspects of grammatical analysis, syntax is one of the underrepresented for African languages. This observation about African languages is true of Lutsotso, hence the need to provide a theory-based account of the language. This study will be useful in providing material for further syntactic research on Lutsotso and other Bantu languages.



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## Introduction

This paper analyses argument licensing morphology with specific reference to cooccurrence of valence increasing processes in the sentence of Lutsotso. OLuluhya is an agglutinative Bantu language with seventeen dialects, one of which is Lutsotso. The seventeen Luluhya dialects are categorized into four groups as follows: Northern dialects, Central dialects, Eastern dialects and Southern dialects. Lutsotso, the focus of this study belongs to the Central dialects of Luluhya language which is spoken in Kakamega central, Lurambi sub county, Kakamega County, Kenya (Osogo, 1965; Odhiambo, 1977). Lutsotso is used as a language of instruction in lower primary classes in areas where it is spoken. The verb is the most basic element of a sentence in grammar, and it is supported by dependent elements known as arguments (Quirk, Greenbaum, Leech, Svartvik, 1985). Payne (1997) refers to arguments as the participants and their semantic roles that are associated with a given verb. These arguments or participants are subjects, objects or complements in a given sentence. Arguments as used in this paper refer to noun phrases in a sentence (Miller, 1993).

These arguments can increase or decrease depending on the type of sentence or participants involved. Crystal (1997) refers to the number and type of bonds which syntactic elements may form with each other as valence. According to Mathews (1997), valence is the range of syntactic elements permitted by a verb or any other lexical unit. Examples 1 below attempts to explain the valence increasing process.

- 1 (a) omu-khana a-tekha-nga  
CL1-girl SM-cook-prog  
'The girl is cooking.'
- (b) omu-khana a-tekha-nga amabere  
CL1-girl SM-cook-prog milk  
'The girl is cooking milk.'
- (c) omu-khana a-tekh-el-anga omu-cheni ichai  
CL1-girl SM-cook -APPL-prog CL1-visitor tea  
'The girl is cooking tea for the visitors.'

In the sentence (1c) the applicative marker {-el-} has been suffixed to the verb tekha (cook) and has licensed an extra argument. In this case the argument is omucheni 'visitor' who is the beneficiary. As such, the arguments are omukhana (girl) ichai (tea) and omucheni (visitor). The Extended Projection Principle of the X-bar theory of Government and binding theory requires that every sentence must have an external argument (subject). Sentence (1c) satisfies this requirement as the argument omukhana (girl) is the external argument while ichai (tea) and omucheni (visitor) are internal arguments. Example (1a) is a univalent sentence with the external argument omukhana (girl). (1b) is a divalent sentence with two arguments omukhana (girl) and amabere (milk). The addition of the applicative morpheme

{-el-} leads to a divalent sentence (1c). The extra argument licensed is an applied object omucheni (visitor) because the action is done or applied on its behalf. In Lutsotso, the applicative suffix has a prepositioned meaning such as ‘by’ ‘to’ ‘for’ ‘at’ ‘against’ and ‘from’ in English. The added argument omucheni (visitor) is an obligatory constituent that has been promoted to object status.

### 1. Methodology

In this study, a descriptive research design was used. The researchers chose this design because according to Creswell (1998) a descriptive design is effective where a large population needs to be studied and where techniques such as interviews and observations are involved. In addition, a descriptive research design requires the researcher to be a native speaker of the language under study (Milroy, 1987). The study utilized both field and library sources of data. The library research provided general information on verbal morphology. The field research provided information that contained linguistic data from Lutsotso. The descriptive design chosen involved the use of primary ethnographic data collection methods as the most suitable tool for the attainment of the study objectives. Data was analyzed qualitatively. The study was carried out in Kakamega Central sub-county, in Kakamega County. Judgmental sampling technique was used in the identification of the informants. The study targeted native speakers of Lutsotso.

### 2. Valence increasing morphemes

Valence increasing morphemes add an argument to the verb. These morphemes upgrade a peripheral participant to a core and obligatory role (Crystal 1997). Lutsotso has derivational suffixes that license the verb to have an extra argument (Odera, et al. 2021). These suffixes are the applicative, the causative and the instrumental.

### 3. Co-occurrence of valence increasing processes

The morphological processes of the verb that add one extra argument in Lutsotso are the applicative, the instrumental and the causative. The causative suffix is {-ia-} while the applicative suffix is {-il-} when the preceding vowel is a, i, u. When the preceding vowel is o or e the infix is el. When the two processes combine the applicative suffix comes first followed by the causative.

Thus; il+ ia =ilia. APPL +CAUS = ilia (cause to kill for)

Various verbal suffixes can co-occur with each other in Lutsotso. There are however order and co-occurrence restrictions in a similar way as Polome (1967) has noted for Swahili verb suffixes. The following section discusses some examples of verbal suffixes that can co-occur with each other together with the order in which they must occur.

### 3.1 Applicative +causative morphemes

This section looks at the co-occurrence of the applicative suffix and the causative suffix on the same verb. The verb *khupa* (hit) and *lola* (see) have been used to illustrate the co-occurrence of the applicative and the causative in the Lutsotso sentence. When the applicative and the causative co-occur, the suffixes must follow each other in the order: 1 applicative 2. Causative.

Verb	applicative +causative
Khupa (hit)	khup-il + i-a =khupilia
Lola (see)	lol-il + i-a =lolilia

As observed earlier the applicative morpheme increases by one the number of arguments in a Lutsotso sentence. The argument that is introduced in the sentence is an applied object. Likewise, the causative morpheme increases the number of arguments by one in a sentence. When the applicative and the causative morphemes occur on the same verb, then the Mirror principle (Baker, 1988) which states that morphological derivations must directly reflect syntactic derivation must be observed. The co-occurrence of the applicative and the causative suffixes is illustrated in (2) using the verb *khupa* (hit).

2 a Anyona a-khupil-e likondi

Anyona SM-hit-FV sheep

‘Anyona has hit the sheep.’

b Anyona a-khup-i-a omukhana likondi

Anyona SM-hit-CAUS -FV girl sheep

‘Anyona made/caused the girl hit the sheep.’

c Anyona a-khup-il-e omu-khana li-kondi

Anyona SM-hit-APPL -FV CL1-girl CL5-sheep

‘Anyona has hit the sheep for the girl.’

d Anyona a-khup-il-i-a omukhana likondi

Anyona SM-TNS-hit -APPL-CAUS -FV omukhana likondi

‘Anyona has caused the sheep be hit for the girl’

Example (2d) is a result of the combination of the applicative and the causative; two valence increasing processes. From this example both the applicative and the causative have the same referent *omukhana* (girl). This argument is therefore likened (made to refer to the same thing) by both the applicative and the causative affixes. The object *omukhana* (girl) thus plays the multiple roles of an applied object and the causer of the action. This means that we cannot have two arguments, one playing the role of applied object and the other since two affixes, these are, applicative and the causative create the same argument, the sentence is complete without another second overt ‘NP’ since *omukhana* (girl) cannot be repeated twice. The displaced argument is however implied. The order of

arguments in (2d) follows the requirement of the Mirror Principle (Baker 1988:13) which states that ‘Morphological derivations must directly reflect syntactic derivations (and vice versa)’. This means that morphological changes take place in exactly the same order as the associated syntactic changes.

If the two processes do not have the same referent, another logical question arises. Can the Lutsotso verb licence two extra internal arguments in addition to the direct object in the basic sentence? Consider the following example;

- 3 a omu-satsa ya-lol-a i-nzokha  
CL1- man SM-saw-FV CL9-snake  
‘The man saw a snake’
- b omu-satsa ya-lol-i-a aba-ana i-nzokha  
CL1-man SM-see CAUS-FV CL2-children CL9-snake  
‘The man made/ caused the children see snake’
- c omu-satsa a-lol-il-e aba-ana i-nzokha  
CL1-man SM-see -Appl-FV CL2-children CL9-snake.  
‘The man has seen a snake for the children’
- d omu-satsa ya-lol-il-i-a omu-khasi abaana inzokha  
CL1-man SM-see-APPL-CAUS-FV CL1-woman children snake  
‘The man made the woman see the snake for the children’

The derived sentence (3d) has four arguments. One external omutsatsa (man) and three internal, the causative abakhasi (woman), the applicative abaana (children) and the direct object inzokha (snake). The structure here has changed from subject verb object (SVO) to subject verb object object object (SVOOO).

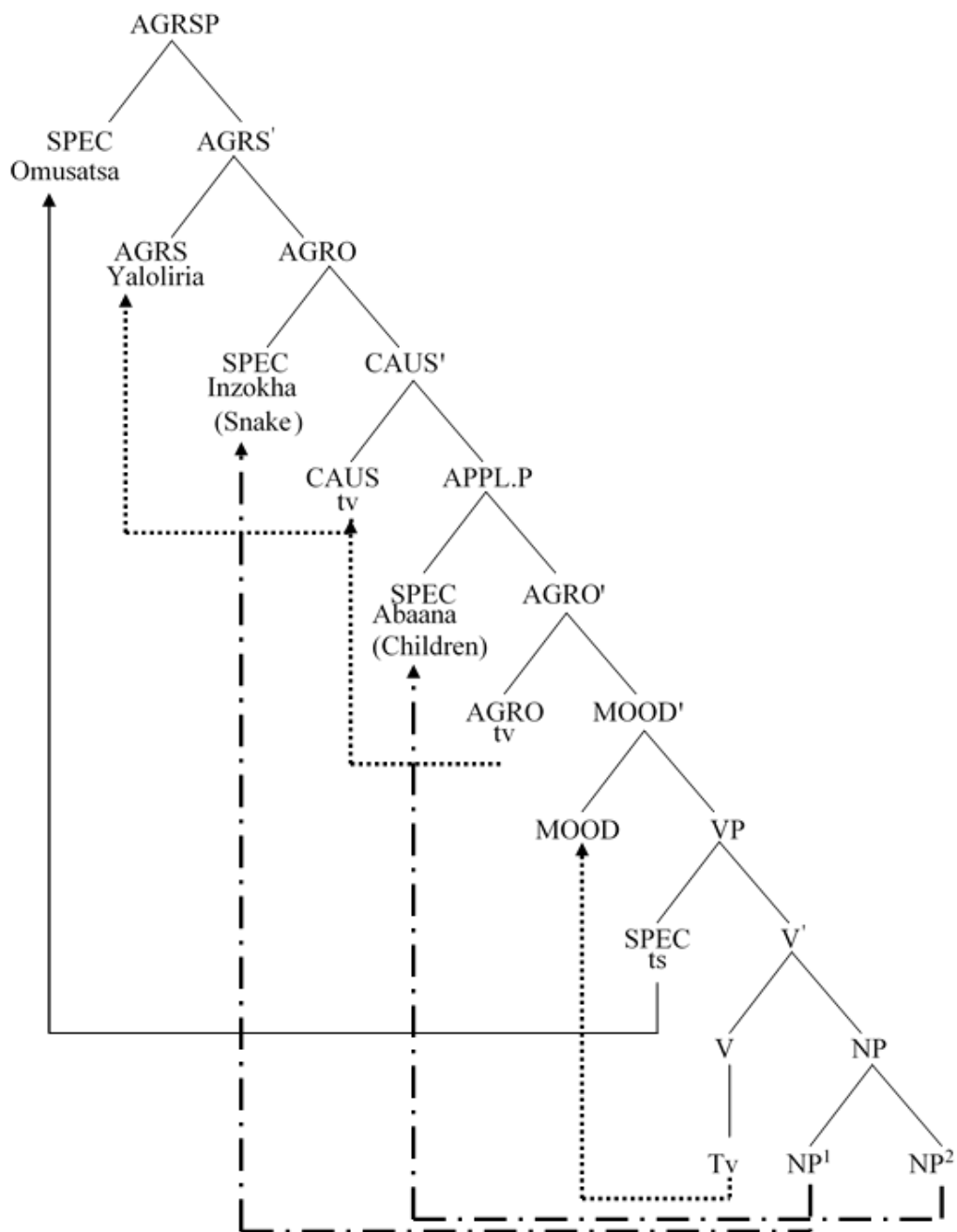
In Lutsotso natural order of arguments, a verb can only take three arguments. In this case it follows that sentence (3d) is ungrammatical because it has four arguments. For the sentence to be grammatical, one of the licensed arguments has to be omitted. To choose which argument between the causative argument omukhasi (woman) and the applicative argument abaana (children) should be removed, the idea of proximity of the action represented by the verb can be used to make a choice of which argument should be omitted. The applicative argument is an applied object with the beneficiary role while the causative argument is a direct object with a secondary agent role. The applicative argument as an internal argument has the action being applied on behalf of it. The causative argument on the other hand has agental features of an external argument by virtue of being indirectly involved in the initiation of the action. In Lutsotso, the applicative argument abaana (children) in (3d) is thus preferred since its analysis shows its part of the verb. The causative argument omukhasi (woman) is not very close to the verb for it has some agent characteristics. This means that it is implied as external. This interpretation leads to a grammatical sentence as shown in (3e):

3e omu-satsa ya-lol-il-ia                      aba-ana                      i-nzokha  
CL-man SM-see App -CAUS      CL2-children      CL9-snake  
'The man, made/ caused the snake be seen for the children.'

Sentence (e) shows the interpretation of the co-occurrence of the applicative morpheme  $\{-il\}$  and the causative morpheme  $\{ia\}$  on the verb *lola* (see). (e) shows that one of the arguments, the causative arguments *omukhasi* (woman) has been eliminated since it has the characteristics of an agent. Sentence (e) satisfies the requirement of the Extended projection principle of the theta theory of GB that states that every sentence must have a subject, the subject in (e) is *omusaatsa* (man).

To ensure that the principle of Full Interpretation (Chomsky, 1995) is adhered to, all arguments; *omusaatsa* (man) *abaana* (children) and *inzokha* (snake) will have their case features checked under their respective heads. This means that the AGRSP head and specifier will be built to check the argument (subject) *omusaatsa* (man) for nominative case, APPLP head and specifier will be built to check the argument (applied object) *abaana* (children) for accusative case and then the AGROP head and specifier will be built to check the argument (direct object) *inzokha* (snake) for accusative case. There will be movement of constituents for the purpose of checking relevant features using the feature checking aspect of the MP (Chomsky, 1993, 1995) as Figure 1 shows. The verb *lola* (see) will also move to various heads checking relevant features.

The constituents that move are the arguments; *omusaatsa* (man), *abaana* (children) and *inzokha* (snake) and the verb *lola* (see). The features that are checked are, nominative case features, accusative case features, mood, agreement, causative features. The feature checking approach of MP (Chomsky, 1993, 1995) is employed in this exercise as Figure 1 illustrates. The subject *omusatsa* (man) is raised from VP-Specifier position (SPEC-VP) and moves to SPEC/AGRSP leaving (ts) behind for nominative case feature checking while the direct object *inzokha* (snake) moves to SPEC /AGRO leaving a trace (to) behind for accusative feature checking (see Figure 1). The applied object *abaana* (children) moves to SPEC/ APPLP for accusative feature checking. The verb moves from its base position to MOOD/ MOOD, AGRO / AGRO' to check all the relevant features before landing at AGRS/ AGRS where it checks its subject agreement features as Figure 1 shows. The verb leaves traces (tv) behind in all the places it moves. The causative does not receive a SPEC since no overt argument is licensed by it.



**Figure 1:** Applicative and causative argument structure

The first line ( \_\_\_\_\_ ) shows the movement of the subject omusatsa (man) from VP-Specifier position (SPEC-VP) to SPEC/AGRSP leaving the subject trace (ts) behind for nominative case feature checking. The second line ( \_\_\_\_\_. ) shows the movement of the direct object inzokha (snake) to SPEC /AGRO for accusative feature checking (see figure 11). The third line ( \_ . \_ . \_ ) shows the movement of The applied object abaana (children) to SPEC/ APPL.P for accusative feature checking. Lastly, the dotted line ( ..... ) shows the movement of the verb The verb lola (see) to AGRS/AGRS where it settles after checking all the relevant features.

In the Minimalist Program (MP) the purpose of movement is to check off uninterpretable features (Chomsky 1993, 1995). Feature checking is seen as a way of eliminating features that would otherwise, be uninterpretable. Feature checking ensures that categories in a particular sentence have the right features for the sentence to be grammatical. After checking the relevant features as illustrated in Figure 1, we conclude that sentence (3e) is grammatical and that there are no vacuos positions in the sentence. In Lutsotso, the arguments *inzokha* (snake) and *abaana* (children) can exchange their positions and the sentence still remain correct.

Mchombo (1999) argues that verbal morphology in Bantu languages encodes various aspects of grammatical information. Mchombo's work reveals that in many Bantu languages, the verb prefixes encode information pertaining to morpho-syntactic categories such as negation, tense, aspect, agreement and modals. The verb suffixes encode information relating to argument structure and thematic information associated with various arguments of the verb. However, Mchombo's work limits itself to investigating the extent to which verbal morphology offers support for the architecture of Universal Grammar and fails to discuss the order of argument licensing morphemes and the constraints that govern their occurrence in a sentence of a Bantu language. Further to this, Mchombo uses illustrations from Chichewa language of Malawi and fails to refer to Luluhya language which is also Bantu. Mchombo's work deviates from the current study in terms of theory application. While Mchombo employs the theory of lexical –functional grammar, the current study employs the GB theory, the feature checking aspect of MP (Chomsky, 1993, 1995) and the Mirror principle (Baker, 1988). A univalent verb can also take two valency increasing affixes. Consider example (4).

- 4 a Anna a-la-lir-a  
Anna SM-FUT-FV-cry  
'Anna will cry.'
- b Anna a-la-lir-i-a omwaana  
Anna SM-FUT-cry-CAUS-FV baby  
'Anna will cause/ make the baby cry'
- c Anna a-la-lir-ir-a mama  
Anna SM-FUT-cry-APPL-FV mother  
'Anna will cry for mother'.
- d Anna a-la-lir-il-i-a mama omwaana  
Anna SM-FUT-cry-APPL-CAUS-FV mama baby  
'Anna will cause/ make the baby cry for mother'

Sentence (4a) is a univalent sentence when the causative affix {i} and the applicative affixe{il} combine the sentence that result is grammatical as (4d) above indicates. The first internal argument in (4d) is an applicative (applied) object *mama* (mother) while the second internal argument is a causative object *omwaana* (baby).

In this process, the applicative process precedes the causative process and this



explains the order of the morphemes on the verb as required by the Mirror Principle (Baker, 1988). A reverse of the morphological order results in ungrammaticality. Consider example (4e) where the causative precedes the applicative:

- 4 e \* Anna la-lir-ia-ir-a                      mama omwaana  
Anna SM-FUT-cry – CAU-APPL-FV mother baby  
'Anna will cause the baby cry for mother'.

The syntactic order of the arguments mama (mother) and omwaana (baby) must reflect the morphological derivations. Mama (mother) which is the applied object precedes omwaana (baby) which was the original object. Likewise, the morphemes that mark the applicative {il} and the causative {i} must follow the order that reflects the syntactic order of these arguments. This idea was discussed by Baker (1988) in what is termed as the Mirror principle.

### 3.2 The applicative and the instrumental morphemes

These two processes increase the arguments of the verb in Lutsotso. The applicative marker is 'ir' in Lutsotso while the instrumental one is 'il'. Kwamboka (2007) did a morpho-syntactic analysis of Ekegusii verb derivation in minimalist program. Kwamboka's work reveals that the applicative morpheme in Ekegusii has power to increase the valence of the verb. Kwamboka's work deviates from the current study in terms of theory application. While Kwamboka utilizes the Minimalist program, the current study employs the GB theory (Chomsky, 1981) the Feature checking aspect of MP (Chomsky, 1993, 1995) and the Mirror principle (Baker, 1988). Kwamboka fails to discuss the co-occurrence of the applicative and the instrumental morphemes on the same verb. When the applicative morpheme and the instrumental morpheme morphologically co-occur on the verb, the applicative comes closer to the verb root than the instrumental one. The applicative marker is 'il' in Lutsotso while the instrumental one is 'il' as the data from Lutsotso illustrates in (5).

- 5 a omu-khasi ya-rem-a omu-saala  
CL1-woman SM-cut-FV CL3-tree  
'The woman cut a tree.'
- b omu-khasi ya-rem-il-a omwa-ana omu-sala  
CL1-woman SM cut-APPL-FV CL1-child CL3-tree  
'The woman cut the tree for the child'.
- c omu-khasi ya-rem-il-a olu-panga omu-saala  
CL1-woman SM-cut-INST – FV CL11-panga CL3-tree  
'The woman cut a tree with a panga.'
- d omu-khasi ya-rem-il-il-a omwa-ana olupanga omusaala  
CL1-woman SM-cut APPL-INST-FV CL1-child panga tree  
'The woman cut the tree for the child using a panga.'

In the examples (5a – d) it is evident that the arguments increase simultaneously with the derivational morphemes. The basic sentence (5a) has two arguments, omukhasi (woman) who is the subject and omusaala (tree) the direct object.

Sentence (5b) has three arguments due to the applicative morpheme {ir} which licensed an additional argument. These arguments are omukhasi (woman) the subject omwaana (child) who is then beneficiary and omusaala (tree) the direct object.

Example (5c) has three arguments omukhasi (woman), omusaala (tree) and olupanga (panga). Sentence (5d) where the applicative affix {ir} and the instrumental affix {il} morphologically co – occur on the verb rema (cut) has four arguments. The arguments are the subject omukhasi (woman) which precedes the verb and the benefactive (applied object) argument omwaana (child) which follows the verb rema (cut), followed by the instrumental argument olupanga (panga) and finally the direct object omusaala (tree). This combination is in line with the mirror principle (Baker, 1988) discussed earlier since the first morpheme on the verb is the applicative (benefactive) and the first derived argument is the beneficiary (applied object) the word order changes from subject verb object (SVO) to subject, verb object, object, object, (SVOOO),

Chomsky (1981, 1982) argues that verbs not only C- select what to occur with, but also semantic selects (s-selection) the NPs to which they can theta mark their roles. In (5d), the verb rema (cut) theta marks the argument (NP) omukhasi (woman) as agent, the argument (NP) omwaana (child) as beneficiary and omusaala (tree) as patient.

Though this (5d) is grammatical, in normal speech, one of the licensed arguments; applied object omwaana (child) and the object olupanga (panga) must be omitted or made optional. To do this, the idea of proximity of the action represented by the verb can be used to make a choice between the applicative and the instrumental.

In (5d) the applicative argument omwaana (child) as an internal argument has the action being applied on behalf of it. The instrumental argument olupanga (panga) on the other hand has the features of an external argument by virtue of being indirectly involved in the initiation of the action as (5c) illustrates. In Lutsotso, the applicative argument is as such preferred since its analysis shows its part of the verb. This means that the instrumental argument will be omitted or made optional. This interpretation leads to a grammatical sentence as shown in (5e).

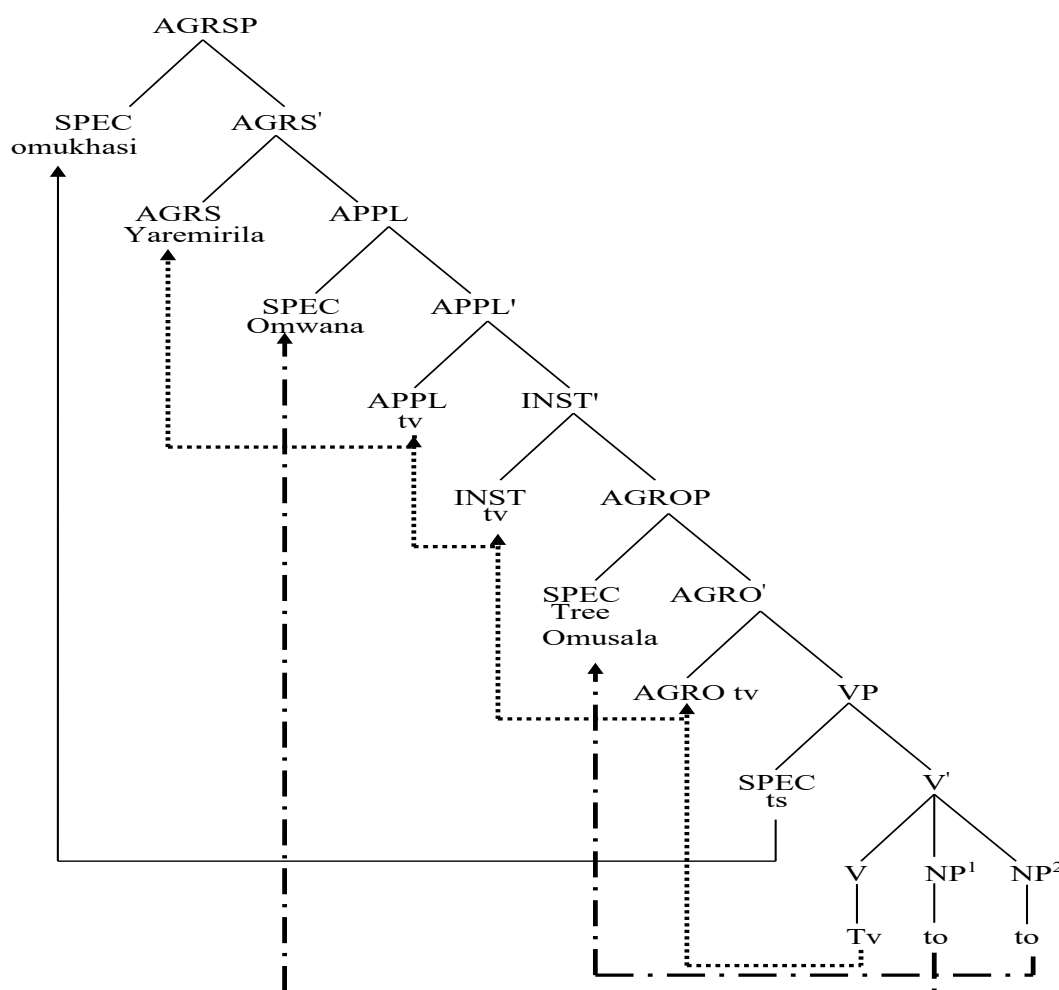
(5e) omu-khasi ya-rem-ir -a omwaana omusaala  
SM-woman SM-cut -APPL-FV child tree  
'The woman cut the tree for the child'

In sentence (5e) the instrument that was used is not important. What matters is the person for whom the tree was cut and who cut the tree. To ensure that the constituents in (5e) have the correct features, the following features are going to be checked using the feature checking aspect of Chomsky's (1993, 1995) Minimalist program; nominative case features, accusative case features, mood, agreement, instrumental and applicative features.

In minimalist program (Chomsky, 1995) the derivative morphemes like the

applicative, causative, instrumental among others are considered to be feature bearing affixes, hence heads and specifiers have to be built for them depending on their lexical and morphological evidence. According to Chomsky (1995) the verb moves to various heads for checking of respective features while the noun moves to specifier for case checking. Thus, for the derived sentence (5e) above, the subject agreement head and specifier (SPEC/AGRS), the object agreement phrase head and specifier (SPEC/AGROP), the applicative head and specifier (SPEC/APPL) will be built to enable the nouns omukhasi (woman), omusaala (tree) and omwaana (child) to check case features as Figure 2 illustrates.

There is movement of constituents for the purpose of feature checking. In the process of movement, the subject omukhasi (woman) moves to SPEC/AGRS leaving behind a trace (ts) for nominative case feature checking while the direct object omusaala (tree) moves to SPEC/AGROP leaving behind a trace (to) for accusative feature checking (see Figure 2). The applicative object omwaana (child) moves to SPEC / APPL leaving a trace (to) behind for accusative feature checking. The verb moves from its base position to AGRO/ AGRO', APPL/ APPL' and INST/INST' to check all the relevant features before landing at AGRS/AGRS where it checks its subject agreement features and aspect features (see Figure 2). The instrumental does not receive a SPEC since no overt argument is licensed by it as Figure 2 shows.



## Conclusion

In Lutsotso, the derivational morphemes modify the syntactic and semantic structure of the sentence. There is a syntactic and semantic regulation between the basic and the derived sentence. The SVO structure is affected by the re-arrangement of arguments after verb derivations takes place. In Lutsotso, some constructions can have two versions such that one version obeys the mirror principle while the other does not. The valence adjusting morphemes can co-occur morphologically on the same verb. This study also concludes that co-occurrence of valence increasing processes result in complex sentences. The findings of this study not only provide new knowledge on Lutsotso morphosyntax but may also be useful to those researchers interested in studies related to the syntax of Bantu languages in general.

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## Disclaimer Statement

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