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Verb-noun (Object) Selectional Restriction in Ebughu

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***Abstract*—Ebughu has been classified as belonging to the Ibibiod group, a sub- branch of Lower Cross in Delta Cross within the Cross River branch of the (New) Benue-Congo (Urua, 2000).It is spoken in Ebughu village in Mbo local Government Area of Akwa Ibom State, Nigeria. Much is not known in documented forms about Ebughu and its speakers. Like most languages of the world, Ebughu exhibits an interesting network of verb-noun object selectional restriction. This paper documents this phenomenon in Ebughu and notes that of the eight verb clusters documented here the degree of selection of noun objects by verbs varies significantly from verb to verb. While some verbs select very few nouns to co-occur with, others select a large number of nouns. This is clearly evident in the observation that of the eight verb clusters documented, two clusters have been observed to have 'nuclear' verbs while no nuclear verbs have been identified for the other six verb clusters. The two verb clusters with nuclear verbs are the 'buy' and "cut" clusters with their nuclear verbs *ɪ́ié* 'buy' and *pégé*, cut' respectively. These two nuclear verbs, unlike the other members of their clusters, have the capacity of co-occurring with a variety of noun objects which have the inherent compatible semantic features of being bought and being cut respectively. This study is based on a database including both actual and potential words, which Ebughu speakers agree are consistent with their language rules.**

***Index Terms*—selection, restriction, deviance, compatibility, constraint, co-occurrence**

I. Introduction

All natural languages have a number of features which make them distinct and one of such features is selectional restriction; a phenomenon which was first described by Chomsky (1965). Selectional (collocational) restriction is the co-occurrence constraint or possibility which exists between lexical items. It is the constraint on the combination of senses of lexical items indicated by certain semantic features which they have (Katz, 1966), since in the normal use of language, linguistic forms do not freely co-occur with other linguistic forms. Both strict subcategorization and selectional rules are basic co-occurrence rules that govern the phenomenon of selectional restriction. Whereas strict subcategorization places constraint on the syntactic environment of co-occurring lexical items and is therefore a syntactic constraint (Trask, 1993), selectional restriction, which is a semantic constraint, specifies the semantic properties that lexical items must have in order to co-occur (Brown and Miller, 1985). Selectional restriction requires that semantic features of co-occurring constituents should be compatible. Incompatibility of features co-occurring results in anomalous constructions (Anyanwu and Iloene, 2003). A typical example of selectional restriction is seen in the syntactic and semantic behavior of the English verb *admire*. This verb syntactically, must subcategorize for a following NP object complement and semantically is constrained to select a [+human] subject (e.g. *John admired the picture*). A violation of selectional restrictions is the explanation for the oddity of the following examples (i-ii).

(i)! John ate a stone.

(ii) The car admired the woman

The verb *eat* requires an edible object and the action of *admiring* can be fulfilled only by an animate actor. Even though the view about the role of selectional restrictions is rather diversified, there is general agreement about the central point of compatibility between verbs and their arguments. With respect to natural language processing system, selectional restrictions can help with parsing, word-sense disambiguation and the resolution of anaphora. The word *star* in the sentence "*John married a star*" is ambiguous between a "famous person" and a "celestial body". However, the example can be disambiguated it is obvious that the object of *marry* must be [+human]. A characteristic of selectional restrictions is that they are language specific. Thus, selectional restrictions are part of language-dependent lexical

information. However, a violation of selectional restrictions does not always result in an ungrammatical expression. In metonymic, metaphoric or idiomatic utterances, selectional restrictions may be violated (Soehn, 2005), as the following examples (iii-v) show respectively. Thus, the violation of selectional restrictions allows us to recognize a non-literal meaning.

(iii) She *put* the wine on the table, right next to the glasses.
(iv) He devoured the book in one single night.
(v) She *poured* out her grief to John

The phenomenon of verb-noun selectional restriction is an instance of selectional restriction (Lyons, 1968, Pearson, 1977, Ndimele, 1999 and 1997, Yule, 2006). Many languages (Emenanjo, 1975, Umeasiegbu, 1979, Anoka1983, Oweleke, 1995) have this syntactic-semantic feature including Ebughu and it is also part of Ebughu language dependent lexical information and the degree of selectivity varies from verb to verb in that while some verbs select numerous nouns to co-occur with, others select just a few. In this paper, we have made an effort to document verb-noun object selectional restriction in Ebughu and have noted that there exists a very strong selectional restriction between some verbs and some nouns. This means that some verbs in Ebughu co-occur with some specific nouns and not with others and this is an indication that the Ebughu verb plays a significant role in determining its accompanying nouns. Eight clusters of Ebughu verbs have been chosen for this analysis and some verbs within the clusters have been classified into nuclear and non nuclear verbs. Whereas a nuclear verb can select all the nouns that are permissible to the members of a given cluster, a non-nuclear verb can only select for co-occurrence within a cluster those nouns whose semantic features and those of the verb are maximally constrained. Ebughu sentences of the structure: $NP_1 + V + NP_2$ have been used for the presentation of the data, where NP_2 is a projection of the noun usually selected by the verb in its object position.

II. Verb-noun Object Selectional Restriction In Ebughu

The Ebughu verbs which are documented in this paper have been grouped into the following eight clusters: ‘break’, ‘buy’, ‘carry’, ‘cut’, ‘harvest’, “put on”, ‘open’, and ‘hold” clusters. We have also tired to present sketchy semantic componential analyses of the eight verb clusters using certain contrastive, diagnostic and supplementary semantic features (Ndimele, 1999)

A. The Break Cluster

In this cluster, five non-clear verbs have been identified here. There is no nuclear verb in this cluster. The non-nuclear verbs identified are: *w ìàk* ‘tear to break’ *búń* ‘twist to break’, *tùàk* ‘hit to break’, *núák* ‘dislocate to break’, and *núán* ‘smash to break’. The semantic features; [+/-breakable], [+/- snappable], [+/- breakable into parts/pieces], [+/- thin object noun], [+/-breakable with hand/leg as instrument], [+/- can be hit against object], and [+/-can be hit with finger or toe] have been used to discuss the semantic compatibility relationship between a verb and its accompanying noun object in this cluster. Verbs in this cluster have a [+] or [-] value of these features encoded in their inherent semantics which specifically relate to the inherent semantic features of the accompanying noun objects usually selected by the verbs in the *break* cluster as shown below.

The Verb w`ìàk ‘tear to break’

The verb *w`ìàk* ‘tear to break’ co-occurs with a noun object with the inherent semantic features: [+breakable], [+snappable], [-breakable into pieces], [-thin object noun], [-leg/hand required as instrument], [- can be hit against object], and [- can be hit with finger or toe] as the example in (1) shows.

(1) òyèbìó àgá w ìák ògòk átìiè
wind 3sgcl.past tear to break branch tree
‘The wind broke the branch of the tree’

The Verb búń ‘twist to break’

The verb búń ‘twist to break’ selects noun objects with the inherent semantic features: [+breakable], [+snappable], [+breakable into parts], [+ thin object], [+ breakable with hand/leg as instrument], [-can be hit against object], and [-can be hit with finger or toe]. An example is given in (2).

(2) ùyà ọ̀gọ́ búń ípé
Uya 3sg.cl.past twist to break stick
‘Uya broke the stick’

*The Verb **tùàk** ‘hit to break’*

The verb tùàk ‘hit to break’ selects objects with the inherent semantic features: [+breakable], [-snappable], [- breakable into parts], [+thin object], [-can be hit with leg/hand as instrument], [+can be hit against object], and [+ can be with finger/toe]. Examples are shown in (3) and (4).

(3) àyí àgá tùàk ńnụ̀ọ̀ọ̀kù
3sg. 3sgcl.past hit to break toe
‘S/he broke his toe’

(4) ùyà àgá tùàk núọ̀bọ̀k

Uya 3sgcl.past hit to break finger
'Uya broke her finger'

*The Verb **núák** 'dislocate to break'*

The verb núák 'dislocate to break' selects noun phrase object with the inherent semantic features: [+breakable], [+snappable], [-breakable into pieces], [-thin object], [-hittable with hand/leg as instrument], [+hittable against object], and [-hittable with finger/toe] as the example in (5) shows.

(5) `ayí àgá núák áfrá
3sg. 3sgcl.past dislocate to break elbow
'S/he broke his elbow

*The Verb **núánī** 'smash to break'*

The verb núánī 'smash to break' selects a object with the inherent semantic features: [+breakable], [-snappable], [+breakable into pieces], [+thin object], [+can be hit with hand/leg as instrument], [+can be hit against object], and [-can be hit with finger or toe].An example is given in (6).

(6) ùyà àgá núán úkídísó
Uya 3sgcl.past smash to break mirror
'Uya broke the mirror'

Sentences (1) to (6) are semantically and syntactically well formed in Ebughu because the verbs in the sentences have co-occurred with noun objects whose semantic/syntactic features are compatible with those of the verbs. Considering this, we can rightly account for why the following sentences (7-12) are semantically deviant.

(7) *òyèbíó àgá núán ọ̀gọ̀k âtiťiè
wind cl.past smash to break branch tree

(8) *ùya agá wìàk úkídísó
Uya 3sg.cl.past tear to break mirror

(9) *àyí ọ̀gọ́ bún áfrá
3sg 3sgcl.past twist to break elbow

(10) *ùya àgá núák ípe
Uya 3sgcl.past dislocate breaḱ stick

(11) * àyí àgá tùàk ọ̀gọ̀k átìtìè

(12) *ùya àgá tùàk ìpán
Uya 3sgcl.past hit to break spoon

In (7-12), sentence (7) is considered deviant because the verb *núán* 'smash to break' whose semantics also implicates breaking of a thin object into pieces using the hand or leg as instrument, has co-occurred with *ọ̀gọ̀k* 'branch' a noun which, by its inherent semantic feature cannot be caused to break into pieces using the hand or leg as instrument. Sentence (8) is also semantically deviant because *wìàk* 'tear to break' inherently implicates a semantics of breaking by snapping into two (and not into pieces) a thin object that cannot be broken by the leg or hand. Therefore, it cannot take *úkídísó* 'mirror' whose semantic features differ completely. Sentence (9) is semantically deviant because *bún* 'twist to break' can only select a noun which is 'thin' and can be broken into parts using the hand or leg as instrument; *áfrá* 'elbow' does not have these features. Sentence (10) is semantically deviant too since *núák* 'dislocate to break' can only select a noun which though, can be snapped into two but cannot be broken into pieces; *ípé* 'stick' does not possess this semantic features unlike *áfrá* 'elbow' which does. The semantic deviance in sentence (11) is due to fact that the verb *tùàk* 'hit to break' has co-occurred with the noun átìtìè 'branch'. However, since tùàk 'hit' involves the breaking of a finger or toe by hitting it against an object, átìtìè is not appropriate. Sentence (12) is also a semantically deviant because of the reasons also given for (11); *tùàk* 'hit to break' and *ìpán* 'spoon' cannot co-occur.

B. The Buy Cluster

In this cluster, we have identified three verbs: *líé* 'buy', *bọ̀gọ̀* 'buy by fetching', and *pègè* 'buy by cutting'. The verb *líé* 'buy' is a nuclear since it can select all 'buyable' objects while bọ̀gọ̀ ' buy by fetching' and *pègè* 'buy by cutting' can only select some specific noun objects. This cluster is analyzable using the semantic features of [+buyable], [+/- can buy any object], [+/- liquid], and [+/- can buy cloth] and discussed below is a selectional restriction analysis of the cluster.

*The Nuclear Verb **lie** 'buy'*

The nuclear verb *líé* 'buy' co-occurs with a noun object with the semantic feature of being a [+buyable object] as the following examples show.

(13) ùyà àgá líé ḿmọ́n

Uya 3sgcl.past buy water
'Uya bought water'

(14) `ayí àgá líé mímí
3sg 3sgcl.past buy drink
'S/he bought a drink'

(15) `ayí àgá líé ádà
3sg 3sgcl.past buy oil
'S/he bought some oil'

(16) ùyà àgá líé ọ̀fọ̀núzĩn
Uya 3sg cl.past buy cloth
'Uya bought a cloth'

(17) èsú àgá líé m̀bòró
Esu 3sgcl.past buy banana
'Esu bought a banana'

*The Verb **bogo** 'buy by fetching'*

The verb *bọ̀gọ̀* 'buy by fetching' selects a noun object with the semantic features of [+buyable object] and [+liquid] as the following examples show.

(18) ùmóh ọ̀gọ́ bọ̀gọ̀ mímọ́n
Umoh 3sgcl.past fetch to buy water
'Umo bought water'.

(19) `ayí ọ̀gọ́ bọ̀gọ̀ mímí
3sg 3sgcl.past fetch to buy drink
'S/he bought a drink'

(20) `ayí ọ̀gọ́ bọ̀gọ̀ ádà
3sg. 3sgcl. past fetch to buy oil
'S/he bought some oil'

*The Verb **pège** 'buy by cutting'*

The verb *pègè* 'buy by cutting' selects a noun object with the semantic features of [+buyable object] and [+ cloth] as the following examples show.

(21) àsúkwọ́ ègé pègè ọ̀fọ̀núzĩn
Asukwo 3sgcl.past cut to buy dress
'Asukwo bought a dress'

(22) ùmóh ègé pègè ọ̀fọ̀n
Umo 3sgcl.past cut to buy wrapper
'Umo bought a wrapper'

(23) ùyà ègé pègè ọ̀fọ̀núkò
Uya 3sgcl.past fetch to buy cloth
'Uya bought a cloth (material)

The sentences provided above (13-23) are semantically well formed. Sentences (13) to (17) clearly show that *líé* 'buy' is the nuclear verb of the 'buy' cluster and can select any noun object for co-occurrence while the verbs *bọ̀gọ̀* 'fetch to buy' and *pègè* 'cut to buy' select semantically compatible 'buyable' noun objects. A violation of the semantic/selectional restriction of the verbs will result in deviant structures as shown in (13-23) below.

(24) *ùmóh ọ̀gọ́ bọ̀gọ̀ ĩpán
Ʊmóh 3sgcl.past fetch to buy spoon

(25) *àyí ọ̀gọ́ bọ̀gọ̀ ùsĩè
3sg 3sgcl.past fetch to buy plate

(26) *àyí ọ̀gọ́ bọ̀gọ̀ ọ̀fọ̀núzĩn
3sg 3sgcl.past fetch to buy dress'

(27) *ùmóh ègé pègè mímọ́n
Ʊmóh 3sgcl.past cut to buy water

(28) *àyí ègé pègè mímí
3sg 3sgcl.past cut to buy drink

(29) *àyí ègé pègè ádà
3sg 3sgcl.past cut to buy oil

The semantic deviance in (24) to (26) for instance, is due to the fact that the nouns *ǐpán* 'spoon', *ùsǐè* 'plate', and *ọ̀fọ̀núzǐn* 'dress' do not possess the semantic qualities of [+liquid] which is semantically and inherently implicated in the verb *bọ̀gọ̀* 'fetch to buy' despite the fact that they meet the other features required in this cluster. Sentences (27) to (29) are also deviant structures. This is because the verb *pègè* 'cut to buy' cannot co-occur with the nouns ḿmọ́n 'water', *ḿmí* 'drink', and *ádà* 'oil' which are [+liquid] despite the fact that they are [+buyable] as *pègè* can only select a noun object with the feature [+cloth] among other semantic requirements it can admit.

C. The Carry Cluster

In the carry cluster, no nuclear verb is yet identified. The verbs *bé* ' pick to carry', *rǐàghá* ' lift to carry', and *wèî* 'strap on the back to carry' have been identified in this paper as separate variants and each selects for co-occurrence an appropriate "carriable" noun object. The weight and shape of the noun object selected is also of semantic significance. The semantic features required in this cluster are: [+carriable], [+/- light noun object], [+/- portable], [+/- effort required] [+/- care required], [+/- animate], and [+/- strappable on the back of some entity]. A semantic analysis of the members of this cluster is shown below.

*The Verb **bé** 'pick to carry'*

The verb *bé* 'carry by picking' requires co-occurring with a noun object with the semantic features of [+carriable], [+light object], [+portable], [-effort required], [-care required], [-animate], and [- carriable the back of some entity] as the following examples show.

(30) ùmóh àgé bé ǹwèd
Umoh 3sgcl.past pick to carry book
Umoh picked the book'

(31) `ayí àgé bé ípéúkùò
3sg. 3sgcl.past pick to carry shoe
'He picked the shoe'

(32) `amì ḿgí bé ǐtàm
1sg. 1sgcl.past pick to carry cap
'I picked the cap'

*The Verb **ríághá** 'lift to carry'*

The Verb *ríághá* 'lift to carry' selects an object with the semantic of features of [+carriable], [-light object], [+effort required], [-portable], [-care required], [-animate], and [- carriable on the back] as the following examples show.

(33) àsúkwó àgá rǐàghá ụ́táí
Asukwo 3sgcl.past lift to carry stone
'Asukwo carried the stone'

(34) `amì ńgí rǐàghá úsíén
1sg. 1sgcl.past lift to carry pot
'I carried the pot'

(35) èsú àgá rǐàghá òkùò
Esu 3sgcl.past lift to carry box
'Esu carried the box'

*The Verb **wèí** 'strap on the back to carry'*

The Verb *wèí* 'strap on the back to carry' requires to co-occur with a following noun object with the semantic features of [+carriable], [+light object], [+portable], [-effort required], [+care required], [+animate], and [+carriable on the back of an entity] as the example shows below.

(36) úsò àgé wèí óyó (ké dé)
Uso 3sg cl.past strap on the back to carry child (on back)
'Uso carried the child (on the back)'.

Sentences (30) to (36) are all semantically well formed. They have also clearly illustrated the fact that the verbs in the carry cluster have co-occurred with the appropriate object nouns that can co-occur with them and any contrary selection disregarding the inherent semantic qualities of the nouns which the verbs select will result in deviance as shown in the following examples.

(37) *Ùmóh ágé wèí ǹwèd
Ùmóh 3sgcl.past strap on the back to carry book

(38) *Ùmóh àgá rǐàghá óyó
Ùmóh 3sgcl.past lift to carry child

(39) *Àsúkwó àgé bé útáí

Àsúkwó 3sgcl.past pick to carry stone

(40) *Àsúkwó ágé wèí úsíén
Àsúkwó 3sgcl.past strap on the back to carry pot

Sentences (37) and (40) are semantically deviant because the verb *wèí* 'strap on the back to carry' which among other features requires [+animate] object has co-occurred with *ǹwèd* 'book' and *úsíén* 'pot' which are [-animate] noun objects. Also, sentence (38) is considered a deviant structure because the verb *rìàghà* 'lift to carry' which requires among other features the [-animate] and [-care required] has co-occurred with *óyó* 'child' which has both [+animate] and [+care required] features while the deviance in sentence (39) is due to the fact that the verb *bé* 'pick to carry' has co-occurred with *útáí* 'stone' whose features include [+effort required] and [-light object] features whereas bé 'pick to carry' inherently' implicates [-effort required] and [+light object]. It is important to note however that there is the possibility of co-occurrence between the verb *bé* 'pick to carry' and the noun *óyó* 'child' with the requirement that the prepositional phrase, *kè* dě will not complement the noun object as in (36). Thus, a sentence like the one in (41) is semantically well formed while (42) is not well formed.

(41) ùmóh ágé bé óyó
Umoh 3sgcl.past pick to carry child
'Umoh carried the child.

(42)* umo ágé bé óyó kè dè
Umo 3sgcl.past pick to carry child Prep. back
'Umoh carried the child on the back:

D. The Cut Cluster

The 'cut' cluster in Ebughu has a nuclear, *pégé* 'cut', which can select any noun object that can be cut while its variants, *kwáí* 'cut by peeling', *bàk* 'cut by slaughtering', *jǫ́k* 'cut by slicing', and *síák* 'cut by splitting'. The semantic features which are required in the analysis of this cluster are: [+can be cut], [+/- plant], [+/- leafy], [+/- animate], [+/- effort required], [+/- sliceable], and [+/- can be cut into parts].The semantic analysis of members of the cluster is provided below.

*The Verb **pégé** 'cut'*

The verb *pégé* requires to co- occur with a noun object whose semantic include feature of [+can be cut]. Examples are given below.

(43) àsúkwó égé pégé òzógòrò
Asukwo 3sgcl.past cut orange
'Asukwo cut the orange'

(44) `amì mǵím pégé égbó
1sg. 1sgcl.past cut goat
'I cut the goat'

(45) `ayí égé pégé mfàn
3sg. 3sgcl.past cut vegetables
'S/he cut the vegetables'

(46) àsúkwó égé pégé ífiá
asukwo 3sgcl.past cut firewood
'Asukwo cut the firewood'

*The Verb **kwáí** 'peel to cut'*

The verb *kwái* has to co-occur with a noun object with the features of [+can be cut], [+plant], [-leafy], [-animate], [-effort required], [-sliceable] and [- can be cut into parts] as the following examples.

(47) àsúkwó ágá kwáí òzógòrò
Asukwo 3sgcl.past peel to cut orange
'Asukwo cut the orange by peeling it'

(48) ùmóh ágá kwáí ọ̀bọ̀nô
Umoh 3sgcl.past peel to cut pawpaw
'Umoh cut the cocoyam' by peeling it

(49) úyà ágá kwáí ípón.
Uya 3sgcl.past peel to cut cocoyam
'Uya cut the coco yam' by peeling it

*The Verb **bàk** 'slaughter to cut'*

This member of the cut cluster requires co-occurring with a noun object with semantic features of [+cutable], [+animate], [+effort], [-plant], [-leafy], [-sliceable] and [+can be cut into parts] as the examples below show.

(50) ámì mígí bàk égbó
1sg. 1sgcl.past slaughter to cut goat
'I cut the goat'

(51) `ayí ágá bàk úníèn
3sg. 3sgcl.past slaughter to cut chicken
'S/he cut the chicken'

(52) `ayí ágá bàk ónàn
3sg. 3sgcl.past slaughter to cut cow
'S/he cut the cow'

*The Verb **jọ́k** 'slice to cut'*

The verb *jọ́k* 'slice to cut' requires co-occurring with a noun object with the semantic features: [+can be cut], [+plant], [+leafy], [-animate], [-effort required], [+sliceable], and [+can be cut into parts] as the following examples illustrate.

(53) `ayí ọ́gọ́ jọ́k mfàn.
3sg. 3sgcl.past slice to cut vegetables
'S/he cut the vegetables'

(54) àsúkwó ọ́gọ́ jọ́k àlìbásà
Asukwo 3sgcl.past slice to cut onions
'Asukwo cut the onions'

*The Verb **síák** 'split to cut'*

This-occurs with a noun object with the semantic features: [+can be cut], [-plant], [-leafy], [-animate], [+effort required], [-sliceable], and [+can be cut into parts] as the following example shows.

(55) àsúkwó ága síák îfiá
Asukwo 3sgcl.past split to cut firewood
Asukwo cut the firewood

Sentences (43) to (55) clearly indicate that the verbs in the 'cut' cluster select nouns which correspond semantically to the inherent semantic features of the verbs themselves. Thus, if the selectional restriction rule in this cluster is violated, the sentences listed in (43) to (55) will become deviant structures as the following examples show.

(56) *àsúkwó àgá bàk òzógòrò
'Asukwo 3sgcl.past slaughter to cut orange

(57) *ùmóh àgá bàk ọ̀bọ̀nộ
'Umoh 3sgcl.past slaughter to cut the pawpaw

(58) *àmí mígí kwáí égbó
1sg 1sgcl.past peel to cut goat

(59) *àyí ágá kwáí úníén
3sg 3sgcl.past peel to cut chicken

(60) *àyí ágá síák mfàn.
3sg. 3sgcl.past split to cut vegetables

(61) *àsúkwo ágá síák òzógòrò
Asukwo 3sgcl.past split to cut orange

(62) *àyí ọ́gọ́ jọ́k íffá
3sg 3sgcl.past slice to cut firewood

(63) *àsúkwo ágá kwáí mfàn
Asukwo 3sgcl.past peel to cut vegetables

(64) *úyà ágá bàk ípọ́n
Uya 3sgcl.past slaughter to cut cocoyam

The semantic deviance observed in sentences (56) to (64) is obviously traceable to a violation of selectional restriction. Sentences (56), (57), and (64) for instance have the verb *bák* 'slaughter to cut' co-occurring with *òzógòrò* 'orange', *ọ̀bọ̀nộ* 'pawpaw', and *ípọ́n* 'cocoyam' and these have both [-animate] and [-effort required] semantic features while *bàk* 'slaughter to cut' has both [+animate] and [+effort required] features. Sentences (58) and (59), on the other hand are deviant because the verb *kwáí* 'peel to cut' which has the semantic implications of [+plant], [-animate], and [-effort required] has co-occurred with the nouns; *égbó* 'goat' and *úníèn* 'chicken' which have opposing semantic features of [-plant], [+animate], and [+effort required]. The structure in (63) is also a deviant structure because the subcategorized noun object has [-animate] and [-effort] features which are not compatible with the semantic features of

the verb *kwáí* 'peel to cut' as mentioned above. Also, sentences (60) and (61) are deviant structures as the semantic senses ([-plant], [+effort required], and [-sliceable]) of the verb *síák* 'split to cut' are opposed to that of the nouns *òzógòrò* 'orange' and *mífàn* 'vegetables'. The deviance in sentence (62) is also because the verb *jọ̀k* 'slice to cut' which has the basic semantic features of [+plant], [+leafy] and

[-effort required] has co-occurred with *ífíá* 'firewood' which has opposing semantic features of [-plant], [-leafy], and [+effort].

E. The Harvest Cluster

In this cluster, no nuclear verb is yet identified. However, four verbs; *bụ̀ọ́* 'dig to harvest' *tán* 'pick to harvest', *kwùó* 'pluck to harvest', and *tíe* 'tap to harvest' have been identified. The semantic features required for the analysis of this cluster are: [+harvestable] [+/-root/stump crop], [+/-instrument required], [+/-effort required], [+/-uprootable], [+/-fruit], and [+/- can be cut].

*The verb **bùó** 'dig to harvest'*

The verb *bùó* 'dig harvest' requires to co-occur with noun objects whose semantic features must include [+harvestable], [+root/stump crop], [+instrument required], [+effort required], [+uprootable], [-fruit], and [-can be cut].The following illustrate the verb in sentences.

(63) ùyá ọ́gọ́ bụ̀ọ́ ìgbé
Uya 3sgcl.pst harvest cassava
'Uya harvested the cassava'

(64) àsúkwọ́ ọ́gọ́ bùó èbrè.
Asukwo 3sgcl.past harvest yam
'Asukwo harvested the yam'

*The verb **tán** 'pick to harvest'*

This verb requires to co-occur with noun objects whose semantic features must include [+harvestable], [+uprootable], [-instrument required], [-root/stump crop], [-fruit], and [- can be cut] as shown in the following sentences (64-65).

(64) úyà ágá tán ígòn
Uya 3sgcl.past harvest melon
'Uya harvested the melon'

(65) àsúkwó ágá tán údídíp
Asukwo 3sgcl.past harvest mushroom
'Asukwo harvested the mushrooms'

*The Verb **kwùó** 'pick to harvest'*

This verb needs to co-occur with noun objects whose semantic features are [+harvestable], [+fruit], [-root/stump crop] [+instrument required], and [-can be cut] as the following examples show.

(66) úyà ògó kwùó òzógòrò
Uya 3sgcl.past harvest orange
'Uya harvested some orange'

(67) asukwo ògó kwùó ógwòébè
Asukwo 3sgcl.past harvest pear
'Asukwo harvested some pears'

*The verb **tíé** 'cut to harvest'*

This verb must co-occur with noun objects with the following features: [+harvestable], [+effort required], [+instrument required], [-root/stump crop], [-uprootable], [+fruit], and [+can be cut].Some examples involving this verb are given below:

(68) úbông ágé tíé ájìè.
Ubong 3sgcl.past harvest palmfruit
'Ubong harvested the palmfruits'

Sentences (63) to (68) as shown above are semantically well formed since the verbs have selected appropriate noun object to co-occur with and a violation of this selection restriction rule will result in deviant sentences as shown below in (70-77).

(70) *úyà ágé tíé ígòn
Uya 3sgcl.past cut to harvest melon

(71) *úbông ágé tíé ígbè
Ubong 3sgcl.past cut to harvest cassava

(72) *úbông ágá tán ájìè
Ubong 3sgcl.past pick to harvest palmfruit

(73) *úyà ágá tán òzógòrò
Uya 3sgcl.past pick to harvest orange
(74) *àsúkwò' ògó kwùó èbrè
Asukwo 3sgcl.past pluck to harvest yam
(75) *àsúkwọ ọ̀gọ́ kwùó ípón
Asukwo 3sgcl.past pluck to harvest cocoyam
(76) *úyà ọ̀gọ́ bù̩ọ́ ógwóébè
Uya 3sgcl.past dig to harvest pear
(77) *Ubong ọ̀gọ́ bù̩ọ̀ ḿmọ́nḿọ́níkọ̀n
Ubong 3sgcl.past dig to harvest waterleaf

The deviance observed in sentences (70) to (77) is due to the violation of selectional restriction. Sentences (70) and (71) for instance, are semantically not well-formed because the verb *tié* 'cut to harvest' whose inherent semantic implication includes [+can be cut] and [+fruit] features has co-occurred with the nouns *ígòn* 'melon' and *ǐgbé* 'cassava' whose semantic features are [-can be cut] and [-fruit]. Similarly, in sentences (72) and (73) the co-occurrence between the nouns *ájĭè* 'palm fruit' and *òzógòrò* 'orange' with the verb *tán* 'pick to harvest' leads to semantic oddity since the inherent semantic features in both *ájĭè* 'palm fruit' and *òzógòrò* 'orange which include [+fruit] and [+instrument required] do not match with the semantic implications of the verb *tán* 'pick to harvest' whose features include [-fruit] and [-instrument required]. Also, the deviance observed in sentences (74) and (75) stems from the co-occurrence of the verb *kwùó* 'pluck to harvest' with the nouns *èbrè* 'yam' and *ípọ́n* 'cocoyam'. Since the verb *kwùó* 'pluck to harvest' has the semantic features [+fruit] and [-can be cut] while *èbrè* 'yam' and *ípọ́n* 'cassava' both have the features [-fruit] and [-can be cut], the co-occurrence incompatibility between them results to the semantic deviance. In the same vein, sentences (76) and (77) are deviant because the verb *bùó* 'dig to harvest' whose semantic implications involve [+effort required] and [+root/stump crop] features has co-occurred the nouns *ógwòébè* 'pear' and *ḿmọ́nmọ́níkọ̀n* 'waterleaf' whose semantic features are [-effort required] and [-root/stump crop].

F. The Cover Cluster

No nuclear verb has been identified in this cluster. The verbs *fù̩k* ' put on the head to cover', *dọ̀nọ́* 'put on the feet to cover', *wán* 'tie to cover', and *gíné* 'hang to cover' have been identified in this cluster and each selects a different type of object to co-occur with. The features relevant for the analysis of this cluster are [+can be put on], [+/-coverable], [+/-wearable on head], [+/- wearable on the feet], [+/-wrappable round], [+/-bead/ornamental].Examples of the verbs of this cluster in sentences as discussed below.

*The Verb **fù̩k** 'put on the head to cover'*

This verb must co-occur with a noun object with the semantic features: [+wearable], [+coverable], [+ wearable on the head] as shown in the following sentence.

(78) ḿmà fùk ǐtàm
1sgcl.future put on the head to cover cap
'I will put on a cap'

*The Verb **dọ̀nọ́** 'put on the feet to cover'*

The verb dọ̀nọ́ 'wear to put on' needs to co-occur with a noun object with the semantic features [+noun], [+ wearable], [-bead/ornamental] and [+ wearable on feet] as shown in (79).

(79) àsúkwọ́ ọ̀gọ́ dọ̀nọ́ ípéúkùò
Asukwo 3sgcl.pst put on the feet to cover shoe
'Asukwo wore a shoe'

*The Verb **wán** 'tie to cover'*

The verb *wán* 'tie to cover' must co-occur with noun objects with the semantic features of [+can be put on], [+coverable], [- can be put on the head], [- can be put on the feet], [-bead/ornamental], and [+wrappable round] as the example below shows.

(80) `amì ńgín wán ọ̀fọ̀n
1sg 3sgclcl.past tie to cover wrapper
'I tied a wrapper'

*The Verb **gíné** 'hang to cover'*

The verb *gíné* 'hang on the neck to cover' must co-occur with a noun object with the semantic features: [- wearable], [-cover], and [+bead/ornamental] as the following example shows.

(81) úyà àgé gíné ńgwà

Uya 3scl.past put to cover beads
'Uya wore some beads'.

From sentences (78) to (81), it is observable that the verbs of the 'cover' cluster are very restrictive in their selection of accompanying object nouns. Thus, the following sentences are not well-formed because of the violation of the verb-noun selectional restriction rules of members of the cluster.

(82) *ḿmá dọ̀nọ́ ỳtàm
1sg.future put on the feet to cover cap

(83) *àmì ńgín wán ńgwà
1sg 1sgcl.future tie to cover beads/ornaments

(84) *àsúkwọ́ ọ̀gọ́ fù̀k ípéúkùò
Asukwo 3sgcl.past put on the head to cover shoe

(85) *uya àgé gíné ọ̀fọ̀n
Uya 3sgcl.past hang on the neck to cover wrapper

The deviance observed in sentence (82) is due to the fact that the verb dọ̀nọ̀ 'put on the feet to cover' which has the semantic features, [+wearable on feet] has co-occurred with the noun *ỳtàm* 'cap' whose semantic features implicates [+wearable on the head]. Sentence (83) is also a deviant structure because the noun *ńgwà* 'beads/ornaments' has co-occurred with the verb *wán* 'tie to cover' which has the features [-bead/ornamental] and thus, contrasts with the semantic features of the noun object it has co-occurred with. Also, sentence (84) is semantically deviant because the semantic features of the verb *fù̀k* ' put on the head to cover' which includes [+wearable on the head] contrasts with that of the noun *ípéúkùò* 'shoe' which is [+wearable on the feet].The semantic deviance noted in sentence (85) is as a result of the fact that the verb *gíné* 'hang on the neck to cover' whose semantic implications include [+bead/ornamental] has co-occurred with the noun *ọ̀fọ̀n* 'wrapper' whose semantic implication includes [-bead/ornamental]. It is however, worthy to note here that in Ebughu, the object *òfòn* which can mean wrapper, dress or a cloth (material) depending on the context in which it is used, can be selected by the verb *dónó* to co-occur with in which case the construction will be of the form in (86).

(86) ù̀môh ọ̀gọ̀ dọ̀nọ́ ọ̀fọ̀n
Umoh 3sgcl.past put on the feet to cover dress
'Umoh put on a cloth (around his feet)'

G. The Open Cluster

Two verbs have been identified in this cluster without any nuclear verb yet. The verbs are *síé* 'uncover to open' and *kwụ̀nọ́* 'shift to open'. The semantic features; [+noun], [+openable], [+/-hand/any object required as instrument], [+/-ease], and [+/-light object] are necessary for the analysis of this cluster

*The Verb **síé** 'uncork to open'*

The verb *síé* 'uncork to open' requires to co-occur with a noun object whose semantic features include [+openable], [+hand/any object as required as instrument], [+ ease], and [+light object] as the following examples show.

(87) ù̀yá àgé síé ḿmí
Uya 3sgcl.past uncover to open drink
'Uya opened the drink'

(88) ù̀môh àgé síé úsì̀è
Umoh 3sgcl.past uncover to open pot
'Umoh opened the pot'

(89) ` ayí àgé síé ọ̀mụ́
3sg. 3sgcl.past uncover to open cup
'He opened the cup'

*The Verb **kwụ̀nọ́** 'uncover to open'*

The verb *kwụ̀nọ́* 'shift to open' necessarily co-occurs with a noun object whose semantics implicates [+openable], [+/- hand required as instrument], [- ease], and [+/ - light object] as the following examples show,

(90) àsúkwọ́ ọ̀gọ́ kwụ̀nọ́ árĩghè
Asukwo 3sgcl.past shift to open door
'Asukwo opened the door'

(91) ù̀môh ọ́gọ́ kwụ̀nọ́ ḿpòìzàn
Umoh 3sgcl.past shift to open car
'Umoh opened the car'

From the examples above (87) to (91) the pattern of the verb- object noun selectional restriction in the open cluster is shown. Again, when this rule of verb-noun selectional restriction in the 'open' cluster is violated, semantically ill-formed sentences will result as shown below.

(92) *ùyá ọ̀gọ́ kwụ̀nọ́ ḿmí
Uya 3sgcl.past shift to open drink

(93) *ayí àgé kwụ̀nọ́ ọ̀mụ́
3sg 3sgcl.past shift to open cup

(94) *àsúkwọ́ àgé sié àr̂ighè
Asukwo 3sgcl.past uncover to open door

(95) *ùmóh àgé sié ḿpoìzàn
Umoh 3sgcl.past uncover to opened car

The semantic deviance in (92) and (93) is due to the fact that the verb *kwụ̀nọ́* can only select a noun whose inherent semantic features agree with its semantic features: [-ease] and [-light object]. However, in this case, the nouns *ḿmí* 'drink' and *ọ̀mụ́* 'cup' both inherently implicate [+ease] and [+light object] semantic features thus, making their co-occurrence with *kwúnó* unacceptable. Also the deviance in sentences (94) and (95) has arisen because the verb *sié* 'uncover to open' has the semantic features of [+ease] and [+light object] while the nouns *àr̂ighe* 'door' and *ḿpoìzàn* 'car' have the semantic features of [-ease] and [-light object] hence, the incompatibility in their co-occurrence.

H. The "Hold" Cluster

In this cluster, no nuclear verb is identified yet but each verb in this cluster selects appropriate noun objects that it can co-occur with it. The verbs *mó* 'grab to hold' *gbé* 'pack to hold' and *gá* 'grip to hold' are here identified as members of this cluster. The semantic features necessary for the analysis of this cluster are [+holdable], [+/-light object], [+/-holdable in between objects], [+/-animate], and [+/-countable]. The verbs of this cluster are briefly discussed below.

*The verb **mó** 'grab to hold'*

The verb *mó* 'grab to hold' must co-occur with a noun object that must have the semantic features of [+holdable], [+light object], [+countable], and [+animate]as the following examples show.

(96) ùmóh ògó mó óyò
Umoh 3sgcl.past grab to hold child
'Umoh held the child'

(97) àsúkwọ ògó mó ǹsán ´zîgé
Asukwo 3sgcl.past grab to hold friend his
'Asukwo held his friend'

*The Verb **gbé** 'pack to hold'*

The verb *gbé* 'pack to hold' requires to co-occur with noun objects whose semantic features must be [+holdable], [+light object], [+in between object], [-animate], and [-countable] as shown below.

(98) ùmóh àgé gbé ńd̂itié
Umoh 3sgcl.past pack to hold sand
'Umoh held some sand'

(99) àsúkwọ́ àgé gbé ányînyáná
Asukwo 3sgcl.past grab to hold broomsticks
'Asukwo held some broomsticks'

*The Verb **gà** 'grip to hold'*

The noun object of the verb *gà* 'grip to hold must be [+holdable], [+light object], [+ holdable in between objects] and [+countable] as shown below

(100) àmì ńgîn gà ǹwèd
1sg 3sgcl.past grip to hold book
'I held a book'

In the hold cluster, it has also been noticed that there exist a strong verb-noun object selectional rule as the verbs in this cluster must select appropriate nouns that meet their semantic requirement for co-occurrence. A violation of the verb-noun selectional rule in this cluster will also result in having deviant constructions as shown below:

(101) *umoh ọ̀gọ́ mọ̀ ányînyáná.
Umoh 3sgcl.past grab to hold broomsticks

(102) *àsúkwọ́ àgé gbé óyó
Asukwo 3sgcl.past pack to hold child

(103) *àmì ngîn gà ńd̂ité

	3sg	3sgcl.past	grip to hold	sand
(104)	*Umoh	àgé	gà	àfíyà
	Umoh	3sgcl.past	grip to hold	crayfish

The verb *mọ̀* 'grab to hold' in (101) whose semantics implicates [+animate] and [+countable] has co-occurred with the noun *ányĩnyáná* 'broomsticks' whose semantic features include [-animate] and [-countable] thus causing the construction to be semantically deviant. In sentence (102), the verb *gbé* 'pack' with the features [-animate] and [-countable] has co-occurred with the noun *óyó* 'child' which has [+animate] and [+countable] features and because of this co-occurrence, the resulting construction is semantically deviant. Also, the deviant status of sentences (103) and (104) stems from the fact that the verb *gà* 'grip' whose semantics implicates [+countable] has co-occurred with the nouns *ńdĩté* 'sand' and *àfíyà* 'crayfish' which share the semantic feature of [-countable].

III. Summary and Conclusion

Thus far we have analyzed the verb-noun object selectional restriction in Ebughu and this has been done by selecting some Ebughu verbs which we have grouped into eight verb clusters. The condition as well as the constraints which are imposed on a particular verb in the verb clusters in terms of the environment in which it must occur is stated with reference to the relevant semantic features of its accompanying noun object. Both the verb and its object must occur in the same minimal clause and the effects of selection are intrinsically connected the meaning of the verb since the verb plays a very crucial role in determining the kind of subject and object that it co-occurs with (Ndimele, 1999). It has been observed that some verb clusters in Ebughu have fewer verbs than others. For instance, the open cluster has just two verbs which are *sĩé* 'uncork to open' and *kwụ̀no* 'uncover to open' which also differ in their selection of noun objects; a violation of which will result in semantic deviance. This shows that verb-noun object selectional restriction phenomenon in Ebughu is not accidental but a clear case of semantic requirements of co-occurrence possibilities between verbs and nouns in the language.

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