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 bìè ‘buy’ and pégè, 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, Anoka 1983, 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 + V + NP2 have been used for the presentation of the data, where NP2 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 tried to present sketchy semantic componental 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: wìak ‘tear to break’ búń ‘twist to break’, ñuak ‘hit to break’, núak ‘dislocate to break’, and núän ‘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 wìak ‘tear to break’

The verb wìak ‘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 ågá wìak ọgòk átííkì
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 ọgò búń ọpè
Uya 3sg.cl.past twist to break stick
‘Uya broke the stick’

The Verb ñuak ‘hit to break’

The verb ñuak ‘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) áyí ågá ñuak ụnụọkù
3sg. 3sgcl.past hit to break toe
‘S/he broke his toe’

(4) ùyà ågá ñuak nùobók
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) *áyì əgá núák áfrá
3sg. 3sgcl.past dislocate to break elbow
‘S/he broke his elbow’

The Verb núán ‘smash to break’
The verb núán ‘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) *úya əgá núán əkídísó
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) *úyèbió əgá núán əgòk átítìè
wind cl.past smash to break branch tree
(8) *úya əgá wìák əkídísó
Uya 3sgcl.past tear to break mirror
(9) *áyì əgòk bún áfrá
3sg 3sgcl.past twist to break elbow
(10) *úya əgá núák ípè
Uya 3sgcl.past dislocate break’ stick
(11) *áyì əgá núák əgòk átítìè
(12) *úya əgá núák ípàn
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 əgòk ‘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 wìák ‘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 əkídísó ‘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; ípè ‘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 núák ‘hit to break’ has co-occurred with the noun átítìè ‘branch’. However, since núák ‘hit’ involves the breaking of a finger or toe by hitting it against an object, átítìè is not appropriate. Sentence (12) is also a semantically deviant because of the reasons also given for (11); núák ‘hit to break’ and ípàn ‘spoon’ cannot co-occur.

B. The Buy Cluster

In this cluster, we have identified three verbs: əli ‘buy’, bògò ‘buy by fetching’, and pègè ‘buy by cutting’. The verb əli ‘buy’ is a nuclear since it can select all ‘buyable’ objects while bògò ‘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 əli ‘buy’
The nuclear verb əli ‘buy’ co-occurs with a noun object with the semantic feature of being a [+buyable object] as the following examples show.

(13) ùyà əgá əli əmón
The sentences provided above (13-23) are semantically well formed. Sentences (13) to (17) clearly show that *iíe ‘buy’ is the nuclear verb of the ‘buy’ cluster and can select any noun object for co-occurrence while the verbs *bógò ‘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) *úmoh ògò bógò ipán
Umoh 3sgcl.past fetch to buy spoon

(25) *áyi ògò bógò ìsìe
3sg 3sgcl.past fetch to buy plate

(26) *áyi ògò bógò òfònúzìn
3sg 3sgcl.past fetch to buy dress

(27) *úmoh ègè pègè nímón
Umoh 3sgcl.past cut to buy water

(28) *áyi ègè pègè nímí
3sg 3sgcl.past cut to buy drink

(29) *áyi ègè pègè ádà
3sg 3sgcl.past cut to buy oil

The Verb *bógò ‘buy by fetching’

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

(18) ìmòh ògò *bógò nímón
Umoh 3sgcl.past fetch to buy water
‘Umoh bought water’.

(19) *áyi ògò *bógò nímí
3sg 3sgcl.past fetch to buy drink
‘S/he bought a drink’

(20) *áyi ògò *bógò ádà
3sg 3sgcl.past fetch to buy oil
‘S/he bought some oil’

The Verb *pègè ‘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) ásúkwo ègè *pègè òfònúzìn
Asukwo 3sgcl.past cut to buy dress
‘Asukwo bought a dress

(22) umoh ègè *pègè òfón
Umo 3sgcl.past cut to buy wrapper
‘Umo bought a wrapper’

(23) uyà ègè *pègè òfònúkò
Uya 3sgcl.past fetch to buy cloth
‘Uya bought a cloth (material)

The verb *pègè is the nuclear verb of the ‘buy’ cluster and can select any noun object for co-occurrence while the verbs *bogò ‘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) *umoh ògò bógò ipán
Umoh 3sgcl.past fetch to buy spoon

(25) *áyi ògò bógò ìsìe
3sg 3sgcl.past fetch to buy plate

(26) *áyi ògò bógò òfònúzìn
3sg 3sgcl.past fetch to buy dress

(27) *umoh ègè pègè nímón
Umoh 3sgcl.past cut to buy water

(28) *áyi ègè pègè nímí
3sg 3sgcl.past cut to buy drink

(29) *áyi ègè pègè ádà
3sg 3sgcl.past cut to buy oil

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C. The Carry Cluster

In the carry cluster, no nuclear verb is yet identified. The verbs bé ‘pick to carry’, riàghá ‘lift to carry’, and wèi ‘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) ùmoh àgé bé ìwèd
   Umoh 3sgcl.past pick to carry book
   ‘Umoh picked the book’

(31) ‘ayi àgè bé ípèúkùò
    3sg. 3sgcl.past pick to carry shoe
    ‘He picked the shoe’

(32) ‘aní nigí bé itáìm
    1sg. 1sgcl.past pick to carry cap
    ‘I picked the cap’

The Verb riàghá ‘lift to carry’

The Verb riàghá ‘lift to carry’ selects an object with the semantic of features of [+carriable], [-light object], [+effort required], [+portable], [-care required], [-animate], and [-carriable the back of some entity] as the following examples show.

(33) ìsùkwo àgá riàghá ùtáì
    Asukwo 3sgcl.past lift to carry stone
    ‘Asukwo carried the stone’

(34) ‘aní rígi riàghá úsíèn
    1sg. 1sgcl.past lift to carry pot
    ‘I carried the pot’

(35) ìsù àgè riàghá òkùò
    Esu 3sgcl.past lift to carry box
    ‘Esu carried the box’

The Verb wèi ‘strap on the back to carry’

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

(36) ësù àgè wèi òyó (kè dé)
    Uso 3sg cl.past strap on the back to carry child (on back)
    ‘Uso carried the child (on 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) *Ùmoh àgé wèi ìwèd
    Umoh 3sgcl.past strap on the back to carry book

(38) *Umoh àgá riàghá òyó
    Umoh 3sgcl.past lift to carry child

(39) *Asúkwó àgè bé ùtáí

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Sentences (37) and (40) are semantically deviant because the verb ̣we ‘strap on the back to carry’ which among other features requires [+animate] object has co-occurred with ̣wè ‘book’ and ̀úsìèn ‘pot’ which are [-animate] noun objects. Also, sentence (38) is considered a deviant structure because the verb ̀wàghà ‘lift to carry’ which requires among other features the [-animate] and [-care required] has co-occurred with ̀óvé ‘child’ which has both [+animate] and [+care required] features while the deviance in sentence (39) is due to the fact that the verb bè ‘pick to carry’ has co-occurred with ̀údà ‘stone’ whose features include [+effort required] and [-light object] features whereas bè ‘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 bè ‘pick to carry’ and the noun ̀óvé ‘child’ with the requirement that the prepositional phrase, kè dè 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) ̀úmòh ̣ágé bè ̀óvé
    Umoh 3sgcl.past pick to carry child
    ‘Umoh carried the child.

(42)* ̀umo ̣ágé bè ̀óvé kè dè
    Uma 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, pègè ‘cut’, which can select any noun object that can be cut while its variants, kwàì ‘cut by peeling’, bàk ‘cut by slaughtering’, jìk ‘cut by slicing’, and sììk ‘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 pègè ‘cut’

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

(43) ̀àsùkwò ̣égé ̀pègè ̀òzógorò
    Asukwo 3sgcl.past cut orange
    ‘Asukwo cut the orange’

(44) ̀amù rìgíì ̀pègè egbò
    1sg. 1sgcl.past cut goat
    ‘I cut the goat’

(45) ̀àyì ̣égé ̀pègè ̀mìnàì
    3sg. 3sgcl.past cut vegetables
    ‘S/he cut the vegetables’

(46) ̀àsùkwò ̣égé ̀pègè ̀ììàì
    Asukwo 3sgcl.past cut firewood
    ‘Asukwo cut the firewood’

The Verb kwàì ‘peel to cut’

The verb kwàì 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) ̀asùkwò ̣á gà kwàì ̀òzógorò
    Asukwo 3sgcl.past peel to cut orange
    ‘Asukwo cut the orange by peeling it’

(48) ̀umòh ̣á gà kwàì ̀òbònà
    Umoh 3sgcl.past peel to cut pawpaw
    ‘Umoh cut the coco yam’ by peeling it

(49) ̀uya ̣á gà kwàì ̀ìpò̀n.
    Uya 3sgcl.past peel to cut coco yam
    ‘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) ámí nígí bák égbó
    1sg. 1sgcl.past slaughter to cut goat
    ‘I cut the goat’

(51) ‘áyí ágá bák únìèn
    3sg. 3sgcl.past slaughter to cut chicken
    ‘S/he cut the chicken’

(52) ‘áyí ágá bák ónàn
    3sg. 3sgcl.past slaughter to cut cow
    ‘S/he cut the cow’

The Verb jòk ‘slice to cut’

The verb jòk ‘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) ‘áyí ógó jòk nìnàm.
    3sg. 3sgcl.past slice to cut vegetables
    ‘S/he cut the vegetables’

(54) asúkwò ógó jòk alìbàsà
    Asukwo 3sgcl.past slice to cut onions
    ‘Asukwo cut the onions’

The Verb sìákk ‘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) asúkwò ága sìákk ífiá
    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) *asúkwò ágá bák óžógòró
    ‘Asukwo 3sgcl.past slaughter to cut orange

(57) *úmòh ógá bák óbóñò
    ‘Umoh 3sgcl.past slaughter to cut the pawpaw

(58) *áyí nígí kwáiá égbó
    1sg 1sgcl.past peel to cut goat

(59) *áyí ágá kwáiá únìèn
    3sg 3sgcl.past peel to cut chicken

(60) *áyí ágá sìákk nìnàm.
    3sg. 3sgcl.past split to cut vegetables

(61) *asúkwò ágá sìákk óžógòró
    Asukwo 3sgcl.past split to cut orange

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 óžógòró ‘orange’, óbóñò ‘pawpaw’, and ipòñ ‘cocoyam’ and these have both [-animate] and [-effort required] semantic features while bák ‘slaughter to cut’ has both [+animate] and [+]effort required] features. Sentences (58) and (59), on the other hand are deviant because the verb kwáiá ‘peel to cut’ which has the semantic implications of [+plant], [+animate], and [-effort required] has co-occurred with the nouns; égbó ‘goat’ and únìèn ‘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 *sáak ‘split to cut’ are opposed to that of the nouns *ózógoró ‘orange’ and *nífán ‘vegetables’. The deviance in sentence (62) is also because the verb *jók ‘slice to cut’ which has the basic semantic features of [+plant], [+leafy] and [+effort required] has co-occurred with *jjá ‘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; *búó ‘dig to harvest’ *tán ‘pick to harvest’, *kwáí ‘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 *búó ‘dig to harvest’

This verb 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) *úyá ógó *búó ígbé
    Uya 3sgcl.pst harvest cassava
    ‘Uya harvested the cassava’

(64) *ásúkwó ógó *búó ébré.
    Asukwo 3sgcl.pst 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], [+/-root/stump crop], [+/-fruit], and [-can be cut] as shown in the following sentences (64-65).

(64) *úyá ágá *tán ígòn
    Uya 3sgcl.pst harvest melon
    ‘Uya harvested the melon’

(65) *ásúkwó ágá *tán úddíp
    Asukwo 3sgcl.pst harvest mushroom
    ‘Asukwo harvested the mushrooms’

The Verb *kwáí ‘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) *úyá ógó *kwáí *ózógoró
    Uya 3sgcl.pst harvest orange
    ‘Uya harvested some orange’

(67) asúkwó ógó *kwáí ógwóébé
    Asukwo 3sgcl.pst harvest pear
    ‘Asukwo harvested some pears’

The verb *tíe ‘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) *úbong ágé *tíé *ájíjé.
    Ubong 3sgcl.pst 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) *úyá ágá *tíé ígòn
    Uya 3sgcl.pst cut to harvest melon

(71) *úbong ágá *tíé ígbé
    Ubong 3sgcl.pst cut to harvest cassava

(72) *úbong ágá *tán *ájíjé
    Ubong 3sgcl.pst pick to harvest palmfruit
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 *tię ‘cut to harvest’ whose inherent semantic implication includes [+can be cut] and [+fruit] features has co-occurred with the nouns *iğön ‘melon’ and iğbę ‘cassava’ whose semantic features are [-can be cut] and [-fruit]. Similarly, in sentences (72) and (73) the co-occurrence between the nouns ajię ‘palm fruit’ and ọzọgōrọ ‘orange’ with the verb tán ‘pick to harvest’ leads to semantic oddity since the inherent semantic features in both ajię ‘palm fruit’ and ọzọgōrọ ‘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 kwiọ ‘pluck to harvest’ with the nouns ẹbẹ ‘yam’ and ọpọn ‘cocomaya’. Since the verb kwiọ ‘pluck to harvest’ has the semantic features [+fruit] and [-can be cut] while ẹbẹ ‘yam’ and ọpọn ‘cocomaya’ 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 biọ ‘dig to harvest’ whose semantic implications involve [+effort required] and [+root/stump crop] features has co-occurred with the nouns ọgwọèbẹ ‘pear’ and nimọnını́nikọn ‘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 *fúk ‘put on the head to cover’, *dọmọ ‘put on the feet to cover’, wáin ‘tie to cover’, and *gìné ‘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 *fúk ‘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) nìmà fúk 'itùm
1sgl.future put on the head to cover cap
‘I will put on a cap’

**The Verb *dọmọ ‘put on the feet to cover’**

The verb dọmọ ‘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) *asukwo ọgọ dọmọ ipéúkùọ
Asukwo 3sgcl.pst put on the feet to cover shoe
‘Asukwo wore a shoe’

**The Verb *wáin ‘tie to cover’**

The verb wáin ‘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 nịgìn wáin ọfọn
1sg 3sgclpctl tie to cover wrapper
‘I tied a wrapper’

**The Verb *gìné ‘hang to cover’**

The verb gìné ‘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) uyá ágẹ̀ gìné ńgwà
Uya 3sgcl.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) *mí mí dó nó i tám
1sg.future put on the feet to cover cap

(83) *am mí ńgin wán ńgwá
1sg 1sgcl.future tie to cover beads/ornaments

(84) *asukwọ ọgo fūk ọpẹ́kúọ
Asukwu 3sgcl.past put on the head to cover shoe

(85) *uya ńgẹ́ ńgin ọfọ́n
Uya 3sgcl.past hang on the neck to cover wrapper

The deviance observed in sentence (82) is due to the fact that the verb dónó ‘put on the feet to cover’ which has the semantic features, [+wearable on feet] has co-occurred with the noun i tám ‘cap’ whose semantic features implicates [+wearable on the head]. Sentence (83) is also a deviant structure because the noun ńgwá ‘beads/ornaments’ has co-occurred with the verb ńgin ‘tie to cover’ which has the features [-bead/oramental] 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 fūk ‘put on the head to cover’ which includes [+wearable on the head] contrasts with that of the noun ọpẹ́kúọ ‘shoe’ which is [+wearable on the feet]. The semantic deviance noted in sentence (85) is as a result of the fact that the verb ńgin ‘hang on the neck to cover’ whose semantic implications include [+bead/oramental] has co-occurred with the noun ọfọ́n ‘wrapper’ whose semantic implication includes [-bead/oramental]. It is however, worthy to note here that in Ebughu, the object ọfọ́n 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) umóh ọgo dónó ọfọ́n
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 sié ‘uncover to open’ and kwunọ ‘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 sié ‘uncover to open’

The verb sié ‘uncover 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) ụya ńgẹ́ sié mí mí
Uya 3sgcl.past uncover to open drink
‘Uya opened the drink’

(88) ụmóh ńgẹ́ sié ńsé
Umoh 3sgcl.past uncover to open pot
‘Umoh opened the pot’

(89) ˈa yi ńgẹ́ sié ńmú
3sg. 3sgcl.past uncover to open cup
‘He opened the cup’

The Verb kwunọ ‘uncover to open’

The verb kwunọ ‘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) ˈasukwọ ọgo kwunọ ńghẹ́
Asukwu 3sgcl.past shift to open door
‘Asukwu opened the door’

(91) ˈumóh ọgo kwunọ ńpọ̀zän
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) *uṣa ọgò kwùnọ ními
   Uya 3sgcl.past shift to open drink
(93) *aṣí ọgè kwùnọ ọmìjì
   3sg 3sgcl.past shift to open cup
(94) *asukwọ ọgè síe ọrìghẹ
   Asukwo 3sgcl.past uncover to open door
(95) *umoh ọgè síe nípọ̀zàn
   Umoh 3sgcl.past uncover to open car

The semantic deviance in (92) and (93) is due to the fact that the verb kwùnọ can only select a noun whose inherent semantic features agree with its semantic features: [-ease] and [-light object]. However, in this case, the nouns ními ‘drink’ and ọmìjì ‘cup’ both inherently imply [-ease] and [+light object] semantic features thus, making their co-occurrence with kwùnọ unacceptable. Also the deviance in sentences (94) and (95) has arisen because the verb síé ‘uncover to open’ has the semantic features of [+ease] and [+light object] while the nouns ọrìghẹ ‘door’ and nípọ̀zàn ‘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 mo ‘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 mo ‘grab to hold’

The verb mo ‘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) umoh ọgò mó ọyọ
    Umoh 3sgcl.past grab to hold child
    ‘Umoh held the child’
(97) asukwọ ọgò mó ọsán ọzígé
    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) umoh ọgè gbé ńditié
    Umoh 3sgcl.past pack to hold sand
    ‘Umoh held some sand’
(99) asukwọ ọgè gbé ńyinyaná
    Asukwo 3sgcl.past grab to hold broomsticks
    ‘Asukwo held some broomsticks’

The Verb gá ‘grip to hold’

The noun object of the verb gá ‘grip to hold’ must be [+holdable], [+light object], [+/-holdable in between objects] and [+/-countable] as shown below.

(100) amí ńgin gá ńwèd
    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 ọgò mó ńyinyaná.
    Umoh 3sgcl.past grab to hold broomsticks
(102) *asukwọ ọgè gbé ọyọ
    Asukwo 3sgcl.past pack to hold child
(103) *amí ńgin gá ńditié
The verb *mò ‘grab to hold’ in (101) whose semantics implicates [+animate] and [+countable] has co-occurred with the noun âyìnînyà ‘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 ọyọ ‘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 ſíte ‘sand’ and ǎfìyà ‘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. 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 síe ‘uncork to open’ and kwíno ‘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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