Advances in Language and Literary Studies
ISSN: 2203-4714
Vol. 6 No. 2; April 2015
Australian International Academic Centre, Australia
Flourishing Creativity & Literacy

Reciprocal Pronouns Binding within Psych-verb Constructions

Napoleon Epoge
Higher Teacher Training College (ENS) Yaounde, University of Yaounde I, PO box 47, Yaounde, Cameroon
E-mail: mcepoge@yahoo.fr

Doi:10.7575/aiac.alls.v.6n.2p.163 Received: 08/12/2014
URL: http://dx.doi.org/10.7575/aiac.alls.v.6n.2p. 163 Accepted: 10/02/2015

Abstract

This paper aims at giving an analysis of certain syntactic peculiarities of reciprocal pronouns within verbs of psychological state, commonly known as psych-verbs. The analysis reveal that psych-verbs constructions have a peculiar property in that the binding conditions of reciprocal pronouns are satisfied in Experiencer-Subject (ES) psych-verbs constructions but are not in the Experiencer-Object (EO) at the surface level; though the latter constructions are grammatical. However, the paper argues that though binding conditions are not satisfied in EO psych-verb constructions at the surface level, they are satisfied in the deep structure (D-structure) construction wherein the reciprocal pronoun, in the theme argument, is bound by a c-commanding Experiencer argument. By so doing, it satisfies binding condition A which holds that a reciprocal pronoun must be bound by an appropriate c-command antecedent. This analysis shows that reciprocal binding in Experiencer-Object psych-verb constructions, at the D-structure, does not reflect the linear order in the thematic hierarchy as proposed by Grimshaw (1990) and the psych-verb in EO D-structure construction is construed as one with two internal arguments.

Keywords: antecedent, binding theory, D-structure, psych-verb, reciprocal pronoun, S-structure

1. Introduction

Verbs of psychological state (such as *anger, bore, disappoint, fear, frighten, please*), commonly known as psych-verbs, express a mental state of event. These verbs, expressing psychological states, have a uniform theta-grid involving an Experiencer: the individual experiencing the mental state, and the Theme: the content or object of the mental state. In this light, some of these verbs allow the Experiencer of the mental effect to appear in the subject position as in [Villagers fear ghost] and others have the Experiencer of the mental effect occupy the object position as in [Ghost frightens villagers]. This portrays that psych-verbs assign thematic roles to their argument NPs. The distinction between thematic roles and grammatical functions can be observed when we compare agentive transitive verbs [e.g. Paul reads novels] and psych-verbs [e.g. Paul likes novels]. In these examples, the NP *Paul* is the subject and the NP *novels* is the direct object. In the transitive verb construction, the NP *Paul* is the Agent of the action described by *read* and *novels* is the Patient of the action. In the psych-verb construction, the NP *Paul* has the thematic role of Experiencer: the person of whom the psychological state described by *like* holds and the NP *novels* is what that state is about, the Theme.

The above illustration reveals that psych-verbs, unlike action verbs, can in fact distribute their thematic roles the other way around; as it were, making the Theme the subject and the Experiencer the object. In the same vein, Ian (2007) holds that there is a possibility of pairing psych-verbs (e.g. like/frighten, fear/frighten) which gives rise to doublets of psych-verbs which are very clear in meaning but distribute thematic roles differently. Consequently, psych-verbs are of interest because they have been and remain a contentious issue in syntactic theory.

With regard to the foregoing extrapolation, two major classes of psych-verbs: fear-type (John fears lions) and frighten-type (Lions frighten John), come to the limelight. What we notice, after reading these classes of verbs, is that there is an apparent crossover of arguments wherein psych- verbs in fear-type map the experiencing participant (e.g. John) to subject position and the stimulating participant (e.g. lions) to object position; whereas, the verbs in frighten-type psych-verbs map the experiencing participant as object and the stimulating participant as subject. The basic properties of fear-type verbs can be summed up in the following way: transitive verbs, affected argument mapped as subject, and stimulating argument mapped as object. On the other hand, the basic properties of frighten-type verbs can be summed up in the following way: transitive verbs, affected argument mapped as object, and stimulating argument mapped as subject. It is healthy to point out here that this is an unusual feature, as it is generally assumed that verbs with similar meanings map their arguments in similar ways. Furthermore, we also notice that psych-verbs play an influential role in the behaviour of reciprocal pronouns. To this end, this paper aims at giving an analysis of certain syntactic peculiarities of reciprocal pronouns within psych-verbs constructions. The expatiation is focused on reciprocal pronouns, psych-verbs constructions, binding theory, and psych-verbs constructions and reciprocal pronouns binding.

2. Reciprocal pronouns

A reciprocal meaning is expressed by *each* + *other* or *one* + *another*. The two components morphologically form a compound reciprocal (*each other* or *one another*). Thus, English has two reciprocal pronouns (each other and one another). Each of these lexical items refers to an exchange or mutual interaction between people or groups. For example, the sentence *X and Y smiled at each other* implies that X smiled at Y and that Y smiled at X. The relationship involves at least two entities that behave in the same manner to each other. Consequently, a reciprocal relation necessarily involves at least two entities. This implies that the antecedent for a reciprocal must denote a set of two or more. Usually it is a plural as in [The girls trusted each other] or an and-coordination of NPs as in [Joan and Cynthia love each other]. *Each other* is appropriate for sets of two while *one another* for sets of three and more as exemplified in (1) and (2) below.

(1) Jonas and Gabriel don't know each other.

(2) Jerry, Tom and Peter hate one another.

In the sphere of syntactic construction, it is healthy to point out here that the reciprocal pronouns *each other* and *one another* can occur in compound or split constructions as shown in (3) and (4) below.

(3) John and Paul are each required to concert with the other.

(4) The twelve elders are required to consult one with the other.

Besides occurring in compound and split constructions, reciprocal pronouns have genitive forms (each other's, one another's) as seen in (5) and (6).

(5) Paul and Cynthia blamed each other's parents.

(6) Rosemary, Lucy and Suzy are jealous of one another's boyfriend.

Added to the afore-mentioned, a reciprocal pronoun requires a structural link between it and its antecedent. In this wise, Huddleston et al (2004:1503) uphold that reciprocals can be linked to their antecedents via the relationship to a verb (verb domain reciprocals), a noun (noun domain reciprocal) or extension (predicative adjective domain).

A verb-domain reciprocal occurs where the reciprocal and its antecedent are related to the same verb directly or by means of a preposition.

(7) David and Deborah praise each other.

(8)John, Paul and Louisa hate one another.

(9) The UN must protect Israel and Palestine from each other.

In (7) and (8) the antecedent is the subject of the verb and the reciprocal the direct object. In (9) the antecedent is the subject of the verb and the reciprocal is the complement of a preposition.

A noun-domain reciprocal is linked to its antecedents via its relationship to a noun as seen in (10).

(10) The world is alarmed at Israeli and Palestine growing hostility to each other

In this example, the antecedent and reciprocal pronoun are related to the same noun: the reciprocal by means of a preposition and the antecedent by a preposition.

In the Predicative adjective domain, the reciprocal is the complement of a predicative adjective and the antecedent is the predicate-subject (11) or object (12).

(11) Catherine and Lucy seem very fond of each other.

(12) The competition had made Paul and John somewhat antagonistic.

As can be seen above, the antecedent is the subject of the verb while the reciprocal is a dependent of a noun heading the complement of the verb. Having given the review of the reciprocal pronouns, it is of cardinal importance to review and discuss psych-verbs constructions.

3. Psych-verbs Constructions

Culicover (1997:122) defines psych-verbs as "verbs or predicates which express a mental state, and may have subjects that contain anaphors (reflexives and reciprocals)". This class of verbs, which denote mental state, include verbs such as 'to fear', 'to frighten', 'to worry', 'to surprise', 'to love' which have a participant that is generally referred to as Experiencer as exemplified in (13) and (14) respectively.

(13) Paul frightens Deborah.

(14) Daniel loves Benedicta.

In example (13), the verb *frightens* expresses the mental state of the object noun phrase *Deborah* that has been aroused by the subject noun phrase *Paul*. In this case, the verb *frightens* is referred to, in linguistic literature, as Experiencer-object verb. In example (14), the verb *loves* expresses a mental state of the subject noun phrase *Daniel* that has been aroused by the object noun phrase *Benedicta*. Consequently, the verb *loves* is referred to as Experiencer-subject verb. With regard to this, it is generally construed in linguistic and syntactic analyses that there are two types of Experiencer verbs: Experiencer-subject (ES) and Experiencer-object (EO) verbs.

These illustrations portray that psych-verbs describe the semantic roles of the participants involved in an action. Generally, participants involved in an action or state of being are assigned theta roles according to their syntactic status as demonstrated in (15).

(15) Mabel worried Paul by not writing.

In (15), the two arguments *Mabel* and *Paul* stand in different semantic relationships with the verb. The argument-NP *Mabel* in the subject position refers to the entity that is the AGENT of the activity of the *worrying*. The argument-NP *Paul*, the direct object, expresses the PATIENT of the activity. Thus, AGENT NPs are usually grammatical subjects and PATIENT NPs are usually grammatical objects. The theta-roles assigned by the verbs to their NPs involved in the state or activity are defined as follows: AGENT (the entity that performs the action), PATIENT/EXPERIENCER (animate entity which performs a stimulus or registers a particular mental or emotional process or state), GOAL (entity towards which an activity expressed by the verb is directed), SOURCE (entity from which something is moved as a result of the activity expressed by the verb), LOCATION (place in which the action or state expressed by the verb is situated), and THEME (entity that undergoes a change of location or possession or whose location is being specified) (Haegeman 1994:50). For instance, the verb *fear* assigns only a PATIENT/THEME role; *give* assigns three roles: AGENT, PATIENT and GOAL; *see* assigns three roles: EXPERIENCER, THEME, and LOCATION; and *borrow* assigns three roles: AGENT, THEME and SOURCE. The above assignments of roles are exemplified by (16, 17, 18 and 19) respectively.

(16) The cat fears the dog.
PATIENT THEME

(17) Yvonne gave the book back to Mabel.
AGENT THEME GOAL

(18) Mary saw a mosquito on the wall.
EXPERIENCER THEME LOCATION

(19) Max borrowed a novel from John.
AGENT THEME SOURCE

As portrayed above, theta theory is concerned with predicate argument structure wherein the predicate is said to take the relevant information from the lexicon and assigns a theta-role to each of its syntactic arguments. Consequently, we could broadly construe that the theta theory examines how lexical items behave in their relationship with other lexical items. The theta criterion (Chomsky 1981:36) described in (20), ensures that the theta-roles are not assigned randomly.

(20) Theta Criterion

Each argument of the verb receives one and only one theta role, and each theta role is assigned to one and only one argument.

As stipulated by (20), the theta criterion ensures that a verb is associated with just the right number of lexical arguments[1] as the psych-verbs constructions in (21) and (22) illustrate.

(21) Suzy fears the lion (ES verbs)

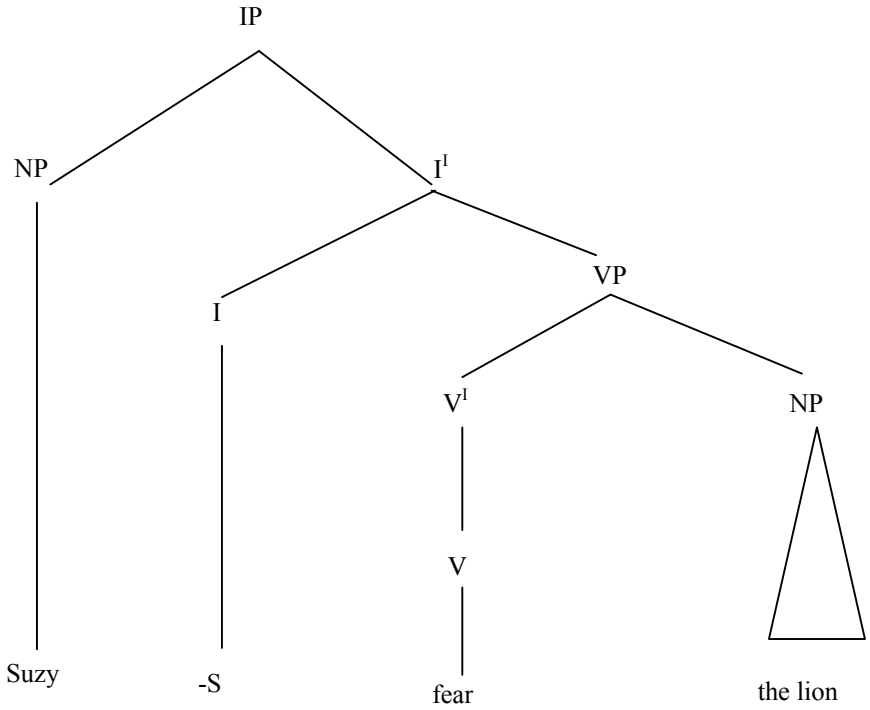
(22) The lion frightens the girl (EO verbs)

In (21) the Experiencer of the verb *fear* appears as the subject *Suzy* and in (22) the Experiencer of the verb *frighten* appears as the object *the girl*. In (21) the NP *Suzy* is the entity that performs the action (technically known as the Agent) and also the animate entity which registers a particular emotional process (technically known as the Experiencer). *Suzy* is the subject of the verb; thus, Experiencer-subject. The *lion* is the entity that is feared and it is known in the literature as the Stimulus. In (22) the NP *the lion* is the entity that performs the action (known in the literature as the Agent) and the NP *the girl* is the animate entity that registers a particular emotional process (Experiencer). This behaviour of psych-verbs brings about syntactic properties especially in EO constructions. One of these properties concerns the thematic hierarchy:

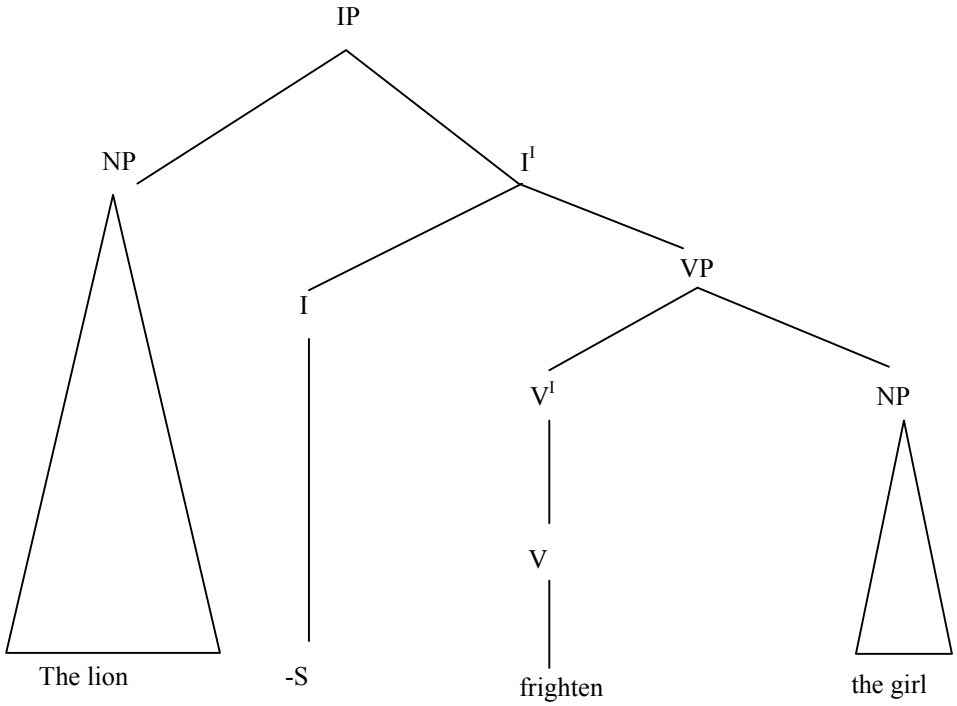
(23) Agent > Experiencer > Goal/Source/location > theme
(Grimshaw 1990:24)

In psych-verb constructions, we realize that the thematic hierarchy is observed in the ES sentence in (21): the Experiencer *Suzy* appears as the subject which is higher than the theme object, *the lion* as shown diagrammatically below.

[1] For instance, the verb *catch* is associated with an AGENT as subject (the catcher) and a PATIENT as object (the caught). As a result of this, the theta criterion ensures that the verb *catch* occurs with two lexical NPs and that AGENT and PATIENT are assigned correctly to its subject and object.



This is not the case in (22). In EO sentence in (22) the theme, *the lion*, appears as the subject and the Experiencer, *the girl,* as the object. The diagram below explicitly illustrates this.



The above diagram feasibly shows that the linear order does not reflect thematic hierarchy as proposed by Grimshaw (1990): the Experiencer of the stimulus is higher than the Theme NP.

4. Binding theory and reciprocal pronouns

The theoretical framework of Chomsky (1981) which characterizes the behaviour of reciprocals in terms of the Binding Theory stipulates that a reciprocal pronoun must be bound within its minimal domain: minimal domain understood as the clause containing the reciprocal pronoun and its antecedent. In linguistic literature, a reciprocal pronoun is an NP which is not interpreted semantically in its own right but instead makes reference to a determiner phrase (DP) for its interpretation. The dependency relation of a reciprocal pronoun NP to a DP is known as binding and the DP with the fixed meaning is the antecedent that binds the reciprocal as exemplified in (24).

(24) The couple adores each other.

In this example, *each other* is a reciprocal pronoun and *the couple* the DP. In this regard, the reciprocal *each other* is a lexical item which has no fixed meaning but instead makes reference to the NP *couple* for its interpretation (meaning).The dependency relation of the reciprocal NP *each other* to the DP *the couple* is known as binding and the

DP *the couple* with the fixed meaning is the antecedent that binds the reciprocal. Therefore, an antecedent is a DP to which some other word, especially an NP in a text, points back to. This shows that the antecedent and the reciprocal point to the same entity. This situation whereby the reference expression and the referent (antecedent) point to the same entity is known in the literature as co-reference. That is, co-reference is when a reference expression and the referent denote the same entity.

Since potential binding relations cannot be read off from the expressions involved, they must be annotated in the linguistic representations. Consequently, Chomsky (1980, 1981, 1982, 1993, 1995, 2006) and much of the subsequent literature, use a system of indexing. Each argument (NP) is assigned a certain integer as its index. If two arguments (NPs) are assigned the same integer, they are co-indexed. In practice, one uses subscripts such as *i, j, k*, etc as variable indices. If *a* and *b* are co-indexed, this is indicated by an identical subscript. Thus, an expression ($a_i \ldots b_i$) *a* and *b* are co-indexed as exemplified below.

(25) The two presidential candidates$_i$ run down each other$_i$.

In this example, the reference expression NP *each other* and the referent NP *the two presidential candidates* refer to the same entity, *presidential candidates.* In this wise, *each other* and *the presidential candidates* are co-referential.

It is healthy to point out here that if reciprocal pronouns do not share their reference with their antecedents, they violate the principle of Full Interpretation since they cannot be interpreted due to deficient references. To get an appropriate interpretation, reciprocal pronouns should be licensed by their antecedents with respect to the nominal features of person and number of entities denoted. This requirement that a reciprocal pronoun and its antecedent agree with their nominal features follows from the fact that the reciprocal depends for its interpretation on the antecedent. The antecedent and the reciprocal share their referent. Thus, when two expressions are co-referential, they carry the same indice because they refer to the same entity. Furthermore, in 24, the reciprocal *each other* and the antecedent *couple* refer to the same entity *couple.*

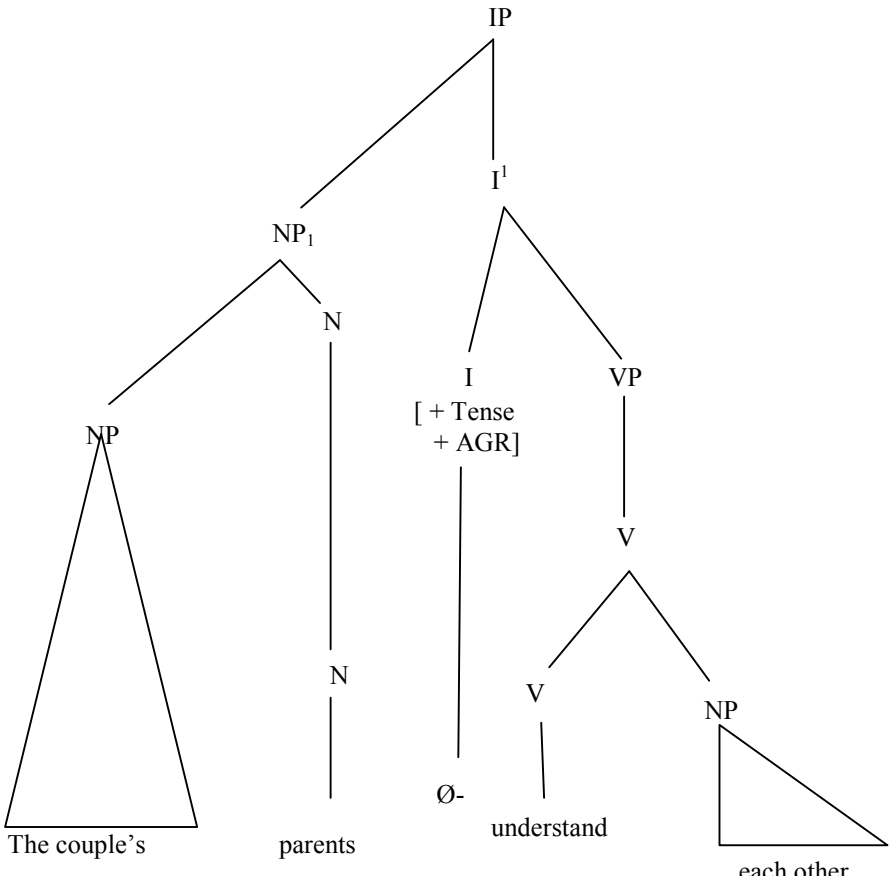
It is worth noting here that not every (DP) is a potential binder of a reciprocal NP. Consequently, Chomsky (ibid) holds that a reciprocal pronoun must be bound within its minimal domain where minimal domain is understood to mean the smallest clause containing the reciprocal NP and its antecedent as illustrated in (26)

(26) The two presidents believe that their wives$_i$ are fund of each other$_i$.

Here, the reciprocal *each other* and the antecedent *wives* are in the same clause (clause-mate).This stipulation by Chomsky is limiting, as it is not sufficient to allow for binding of a reciprocal. In addition to being clause-mate, Haegeman (2001:195) compliments that the antecedent must precede the reciprocal. Though the above stipulations are plausible, they are still wanting as a reciprocal and its antecedent may be found in the same clause, the latter preceding the former, and the antecedent is not successfully bound by the presumed antecedent due to the mismatch in structural relationship between the reciprocal NP and its antecedent NP as seen in (27).

(27) The couple's parents understand each other.

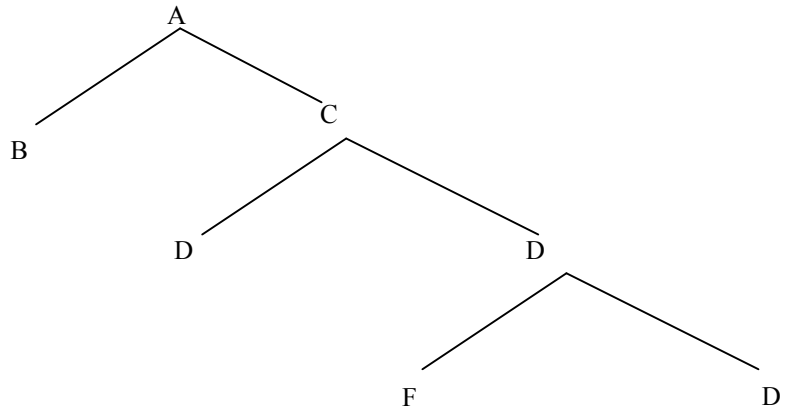
As this example portrays, the antecedent and the reciprocal are within the same local domain of the clause, but the reciprocal *each other* cannot be successfully bound by the presumed antecedent *couple* which occupies the specifier position of the subject NP, *the couple's parents* as seen below.



In this tree diagram the antecedent *couple* is 'higher up' in the tree than the reciprocal *each other*. But the fact that the antecedent is higher up in the tree is not sufficient for it to bind the reciprocal. That is why the reciprocal *each other* cannot be successfully bound by the presumed antecedent *couple* which occupies a specifier position of the NP *the couple's parents*. This is where the notion of c-command, which holds that the antecedent must c-command the reciprocal, comes in.

C-command (constituent-command) holds that: *X* c-commands *Y* if and only if the first branching node dominating *X* dominates *Y* and *X* does not dominate *Y*, nor *Y* dominates *X* (Radford, 2004).

This definition is illustrated diagrammatically as follows:



D c-command in this diagram shows that the first branching node above D is C. So by the definition above, any other node dominated by C will be c-commanded by D. Now since C dominates E, F and G (but not A and B), it follows that D c-commands E, F and G. Furthermore, since E is the sister of D and since F and G are nieces of D, it has been opined that: A node c-commands its sisters and their descendants. Thus, in the above diagram, while A c-commands nothing, B c-commands [C, D, E, F and G], C c-commands [B], D c-commands [E, F and G], E c-commands [D], F c-commands [G] and G c-commands [F].

With regard to this, C-command (constituent-command) is a structural relation between constituents which plays an important role in syntax and semantics. The notion of c-command is important with reciprocals because there are structural conditions, which determine whether a given expression can or cannot be interpreted as an antecedent of a reciprocal pronoun. A reciprocal pronoun must have an appropriate c-command antecedent.

(28)The villagers might disgrace each other.

In (28) the reciprocal pronoun has the NP (The villagers) as its antecedent. The NP *The villagers* serves as the antecedent of *each other* because the NP (The villagers) c-commands the NP (each other). However, in some other cases, more than one constituent can be interpreted as the antecedent of a reciprocal.

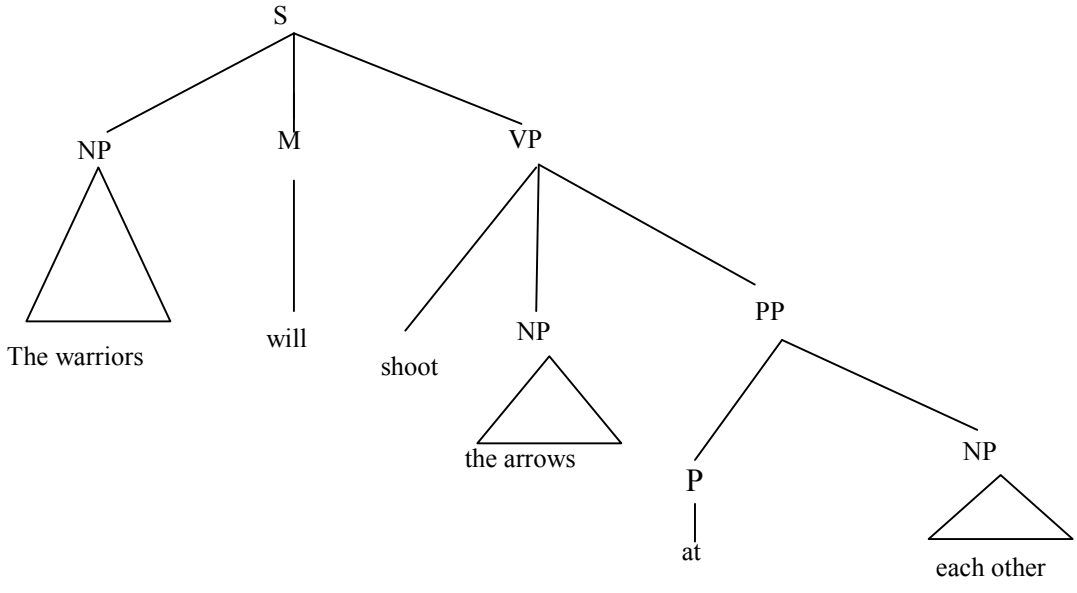
(29) The warriors will shoot the arrows at each other.

In this case, *each other* might refer back to *the arrows* (so that arrows are being shoot at other arrows), or to *the Warriors* (so that arrows are being shot by the Warriors at other Warriors). To indicate co-reference, we can say that example 29 above is ambiguous as between the two interpretations represented below.

(30a) The warriors$_i$ will shoot the arrows$_j$ at each other$_j$.

(b) The warriors$_i$ will shoot the arrows$_j$ at each other$_i$.

To make this ambiguity feasible, we can illustrate it in a tree diagram as follows:



As the diagram shows, the NP (The Warriors) c-commands the reciprocal (each other) by virtue of the fact that the first branching node above the NP (The Warriors) is S and S dominates the reciprocal NP (each other); hence *the Warriors* can function as the antecedent of *each other*. It is also worthy of note that the NP (the arrows) is VP, and VP dominates the NP (each other). Hence *the arrows* can also serve as the antecedent of *each other.* As can be inferred above, c-command plays an important role in the proper description of syntactic and semantic phenomenon like reciprocal pronouns.

(31) Jonas and Mabel despise each other.

The reciprocal *each other* in example (31) above, refers back to the NP (Jonas and Mabel) and cannot refer to some other group of people in this context. In a nutshell, c-command holds that:

A node *A* c-commands a node *B* if and only if

i) *A* does not dominate *B*;

ii) *B* does not dominate *A*;

iii) The first branching node dominating *A* also dominates *B*.

(Haegeman 2001:209)

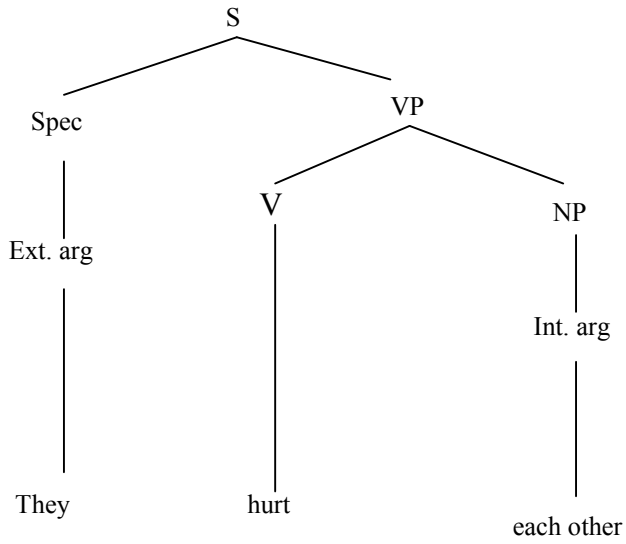
Thus, in example (27) presented in the tree diagram, *couple* which occupies the specifier position of the NP *the couple's parents*, does not c-command the reciprocal *each other* because the first branching node above the NP *the couple* is NP_1 and NP_1 does not dominate the reciprocal NP *each other*; hence, *the couple* cannot function as the antecedent of *each other* because it does not satisfy the structural conditions for being the antecedent imposed in c-command conditions on reciprocals. Though the antecedent NP *the couple's parents* c-commands the reciprocal NP *each other,* it is ruled out as the antecedent for the NP *each other* by the appropriateness condition in c-command condition for reciprocals. The reciprocal NP *each other* requires an antecedent denoting two entities, and the antecedent NP *the couple's parents* clearly denotes more than two entities[2].

As a result of this, it is worth noting that, an antecedent and the reciprocal must agree with respect to the nominal feature of person and the number of entities. This is known in the literature as co-indexation. In (27), there is a mismatch in the structural relationship between the reciprocal NP and its appropriate antecedent NP *the couple's parents.*

The foregoing discussion reveals that for binding to occur it requires two NPs. These two NPs, the reference and the referent are known in linguistic literature as arguments. Argument here refers to the participants involved in the state or activity expressed by the predicate. For instance, the argument structure of the verb determines which elements are obligatory in the sentence and this depends on the activity expressed by the verb.

(32) The students hurt each other.

The verb *hurt* requires two participants in the sentence (students and each other) in order to enable the arguments to be expressed. The NP *students* is understood here as the subject of the sentence while the NP *each other* is a VP-internal complement. In this wise, the NP *students* is referred to as an external argument while *each other* is internal argument. This is exemplified in the tree diagram below.



As this example portrays, the argument structure of the verb determines the number of constituents required in the sentence for the argument to be expressed. In this case, the verb *hurt* subcategorizes for two constituents or NPs:

hurt: Verb; 1 2

NP NP

[2] the parents of a couple denotes four persons; i.e. the parents of the bride and the parents of the groom.

Arguments, as seen above, generally stand in different semantic relationships (theta roles) with the verb as exemplified below.

(33) The candidates depress each other.

In this example, the argument–NP, *candidate* in the subject position refers to the entity that is the agent of the activity of the verb *depress*. The argument-NP *each other* in object position is the entity that is the beneficiary of the activity described by the verb. In this wise, Reinhart and Reuland (1993:678) define the syntactic predicate structure and syntactic arguments as follows:

a) The syntactic predicate structure of (a head) P is P. All its syntactic arguments are an external argument of P.

b) The syntactic arguments of P are the projections assigned theta-role or case by P.

Following this definition, the syntactic arguments of P are taken to be those realizing a grammatical function of P. That is, its theta and case assignment.

(34) Paul said that the candidates hate each other.

(35) The two candidates hate each other.

In example (34) above, the predicate *hate* takes *Candidates* and *each other* as its syntactic arguments. In this wise, the predicate *hate*, its internal argument *each other* and the external argument *Candidates* constitute a syntactic predicate structure. This syntactic predicate structure (the embedded clause in example (34) above) is a binding domain in which syntactic binding condition is applied. In example (35), the predicate *hate* has *two candidates* as its subject and *each other* as its internal argument. The syntactic predicate structure in this example is the matrix clause. Notice that a subject is always required as argument of the syntactic predicate structure. Therefore, a predicate head *P* does not form a syntactic predicate structure if it lacks an external subject.

In view of the foregoing discussion the binding conditions hold that: A binds B if and only if (i) A is in A-position, (ii) A c-commands B, and (iii) A and B are co-indexed. These binding conditions rely on four tenets: argument position, c-command, co-reference, and co-indexation.

5. Psych-verb constructions and reciprocal pronouns binding

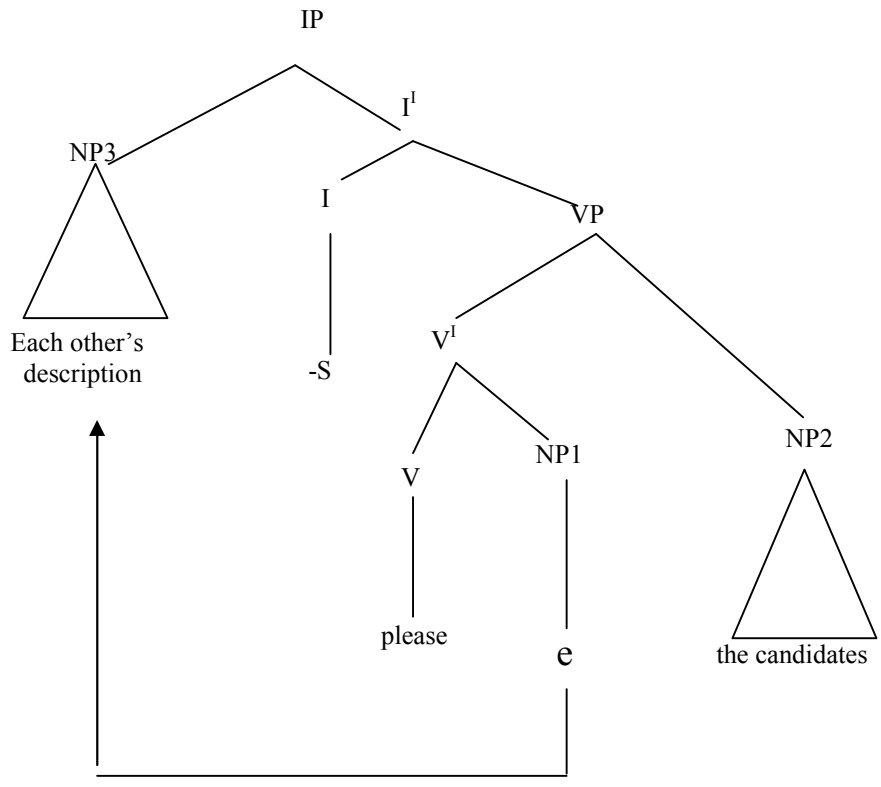
A peculiar property of psych-verb constructions is that the binding conditions of reciprocal pronouns are satisfied in ES constructions but not in the EO constructions, though the latter constructions are grammatical.

(36) John and Paul hate each other. (ES)

(37a) *Picture of each other pleases the candidates in a run-off for the presidency. (EO)

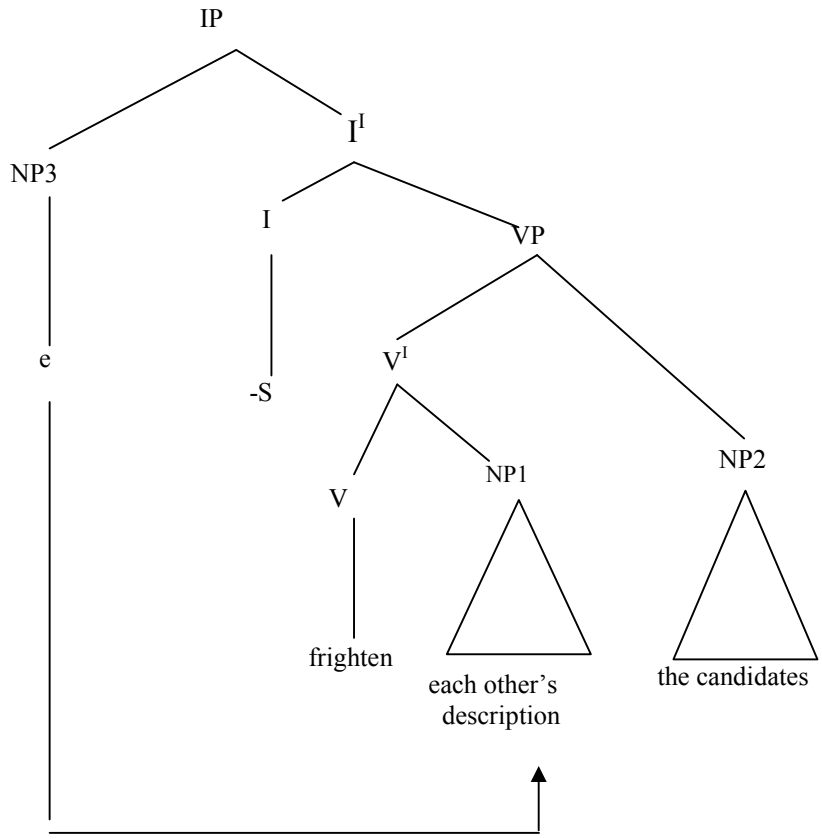
(37b) Each other's picture pleases the candidates in the run-off for the presidency. (EO)

In (37) the reciprocal *each other* in the subject NP cannot be bound by the object NP *the candidates* because the object NP does not c-command the reciprocal in the surface structure as shown diagrammatically below.



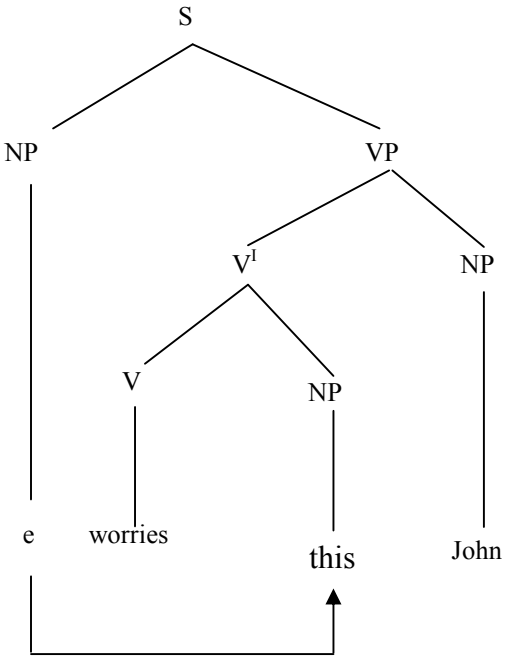
This diagram shows that it is not possible for an antecedent realized in a configurationally lower position NP2 to c-command the reciprocal in NP3 *each other* because the first branching node dominating the antecedent NP2 is VP, which does not dominate the reciprocal pronoun in NP3. Though c-command is not satisfied, the sentence is grammatical in terms of 'backward binding'. However, 'backward binding' is problematic because of the assumption that an antecedent must c-command its anaphor. Consequently, it is not in line with the stipulations of the binding theory, with regard to anaphors, as stipulated by Chomsky (1981, 1993, 1995) that an NP A binds an NP B if and only if (i) A is in A-position, (ii) A c-commands B, and (iii) A and B are co-indexed. Though the reciprocal NP *each other* in (25) is in argument position and co-indexes with the antecedent NP *candidates*, the latter NP does not c-command the former NP in the surface structure (S-structure).

Though c-command condition on reciprocal pronoun binding is not satisfied in the S-structure of psych-verbs construction, it is satisfied in the D-structure wherein psych-verbs are derived through transformation or by movement as exemplified in the tree diagram below. In this case, the psych-verb construction lacks an external argument but has two internal arguments.



In this tree diagramme, the thematic hierarchy is respected because the Experiencer *the candidates* is projected to a position higher than the theme NP *each other's picture*. The Experiencer *the candidates* is assumed to be assigned an inherent accusative case. So the NP *each other's picture* has to move to *e* in order to be assigned case. In this situation, a reciprocal in the theme argument can be bound by a c-commanding Experiencer argument; thus, satisfying binding condition A which holds that an anaphor must be bound by an appropriate c-command antecedent. The hierarchy dictates that arguments attributed Experiencer roles be projected higher in the syntactic structure than stimulus arguments, which are typically assigned Theme roles. Thus, NP2 will be assigned a semantic role which is higher in the hierarchy and NP1 will be assigned one which is lower in the hierarchy. This is in line with Belletti and Rizzi (1988:344) proposal of a linking principle for Experiencer verbs which states that "given a theta-grid [Experiencer, Theme], the Experiencer is projected to a higher position than the theme". Since Belletti and Rizzi used Italian data in their study, the translated example they used to illustrate the rule is the one given in example (38) below.

(38) This worries John.



In this analysis, the thematic hierarchy is respected because the Experiencer *John* is projected to a position higher than the theme NP *this*. The Experiencer *John* is assumed to be assigned an inherent accusative case. So the NP *this* has to move to *e* in order to be assigned case. To justify the movement, Belletti and Rizzi establish a rule that states that:

V is a structural case assigner if and only if it has an external argument

(Belletti and Rizzi 1988:332)

This analysis is based on the assumption that the *frighten (or worry) type verbs* do not have external arguments. This view is not entertained by Chung (1998) who uses -er nominals to argue that *frighten type verbs* have external arguments because the -er exponents in words like 'worrier' refers to the external argument and as a result claim that Belletti and Rizzi psych-verb construction analysis is wanting. Despite this critique, the approach to psych-verb constructions adopted by Belletti and Rizzi is plausible for the following reasons:

i) the movement hypothesis accounts for the structural relationship (c-command) between co-referential constituents in psych-verbs constructions.

ii) it clarifies cases of backward binding through the assumption that binding condition A is satisfied given that the reciprocal within the subject DP of the sentence is bound in its local domain by a c-commanding antecedent.

iii) It respects theta hierarchy as the Experiencer is projected to a higher position given a theta-grid [Experiencer, Theme]

What we gather from the foregoing analysis and discussion is that binding of reciprocal pronouns in the Experiencer-Object psych-verbs constructions is only possible in the deep structure (D-structure). In D-structure, the reciprocal pronoun in the theme argument can be bound by a c-commanding Experiencer argument. By so doing, it satisfies binding condition A which holds that a reciprocal must be bound by an appropriate c-command antecedent. In the same vein, the discussion reveal that reciprocal binding in Experiencer-Object psyche-verbs constructions does not reflect the linear order in the thematic hierarchy as proposed by Grimshaw (1990:24).

6. Conclusion

This paper has examined the behavior of reciprocal pronouns within psych-verbs constructions. It strives to show that psych-verbs constructions have a peculiar property in that the binding conditions of reciprocal pronouns are satisfied in Experiencer-Subject psych-verbs constructions but are not in the Experiencer-Object psych-verbs constructions at the surface level. It argues that, though the c-command binding condition does not hold in EO psych-verbs constructions in the S-structure, it is possible in the D-structure wherein psych-verbs constructions are derived through transformation or by movement. In this situation, the reciprocal pronoun in the Theme argument can be bound by a c-commanding Experiencer argument. With regard to this type of binding, it is evident that that reciprocal binding in Experiencer-Object psych-verbs constructions does not reflect the linear order in the thematic hierarchy as proposed by Grimshaw (1990) and has two internal arguments.

References

Belletti, A. and L. Rizzi (1988). Psych-verbs and Theta-Theory. *Natural Language and Linguistic Theory, 6,* 291-352.

Chomsky, N. (1980). On Binding. *Linguistic Inquiry, 11*, 1-46.

Chomsky, N. (1981). *Lectures on Government and Binding*. Dordrecht: Foris publications.

Chomsky, N. (1982). *Some Concepts and Consequences of the Theory of Government and*

Binding. Cambridge, Mass.: MIT Press.

Chomsky, N. (1993). A Minimalist Program for Linguistics. In *The View from Building 20: Essays in Linguistics in honor of Sylvain Bromberger,* ed Kenneth Hale and Samuel Jay Keyser, 1-52. Cambridge, Mass.: MIT Press.

Chomsky, N. (1995). *The Minimalist Program.* Cambridge, Mass.: MIT Press.

Chomsky, N. (1999). Derivation by Phrase. *MIT Occasional Papers in Linguistics*, No 18. MIT.

Chomsky, N. (2006). Minimalist Inquiries. In Martin, R., D. Michaels and J. Uriagereka (eds.),

Step by Step. Cambidge, MA.: MIT Press. 89-155.

Chung, T. (1998). English Psych-verb Constructions and –ER Nomimals. *Korean Journal of Linguistics. 23*(4), 723-741.

Culicover, P. (1997). *Principles and Parameters: An Introduction to Syntactic Theory.* Oxford: OUP.

Grimshaw, J. (1990). *Argument Structure.* Cambridge: MIT Press.

Haegeman, L. (2001). *Introduction to Government and Binding Theory*. Oxford: Blackwell.

Huddleston, R., Pullum, G., & Stirling, L. (2004). *The Cambridge Grammar of English Language*. Cambridge: CUP.

Ian, R. (2007). *Diachronic Syntax*. Oxford: OUP.

Radford, A. (2004). *Transformational Grammar*. Cambridge: CUP

Reinhart, T. and Reuland, E. (1993). "Reflexivity". *Linguistic Inquiry, 24*, 657-720

White, L. (2003). *Second Language Acquisition and Universal Grammar*. Cambridge: CUP.