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THEMATIC ROLE ASSIGNMENT IN ENGLISH SENTENCES: A QUICK GLANCE AT AN INTERFACE BETWEEN SYNTAX AND SEMANTICS

Eni Maharsi
Universitas Brawijaya
Jl. Veteran, Malang – East Java
enimaharsi@ub.ac.id

Abstrak

Makalah ini meninjau peran tiap elemen dalam kalimat Bahasa Inggris dengan menggunakan pendekatan peran tematis. Penekanannya adalah mengidentifikasi bagaimana posisi kata dan frase dalam struktur sintaksis menentukan peran yang dibawa oleh referen frase nomina dalam situasi kalimat. Hasil tinjauan menunjukkan bahwa posisi suatu frase nomina menentukan peran tematisnya. Selain itu terdapat relevansi antara struktur sintaksis mendalam dengan penentuan peran tematis tiap frase nomina dalam suatu kalimat.

Kata Kunci: *penentuan peran semantis, frase nomina (FN), struktur sintaksis*

Abstract

This paper examines the role of elements of English sentences by employing the approach of thematic role assignment. The emphasis is on how the positioning of words and phrases in syntactic structure helps determine the roles that the referents of NPs play in the situation described by the sentences. The results reveal that the position of an NP's determines its thematic role and. There is a relevance between deep syntactic structure and the assignment of thematic roles for every NP in the sentence.

Keywords: *thematic role assignment, noun phrase (NPs) syntactic structure*

INTRODUCTION

One universal reality of all languages in the world concerns with the function of languages to convey meaning. Like words, sentences must convey meaning for languages speakers to understand each other at all. But the meaning of the sentence cannot be obtained merely by adding up the meaning of each content word of the sentence (Finegan 1992: 160). O'Grady asserts that the meaning of a sentence is determined by the meaning of its component parts and the manner in which they are arranged in syntactic structure (1996: 284).

There are a lot of different ideas about precisely how the meaning of a sentence's component words and their arrangement in syntactic structure determine sentence meaning. For instance, there is not only question about whether thematic roles are syntactic, semantic, or conceptual in nature, but also whether they should be regarded as grammatically significant entities at all (Carlson and Tanenhaus 1999: 124).

Thematic role is one aspect of semantic interpretation which involves the roles that the referents of NPs play in the situation described by the sentences. Consider the following sentence:

(1) *The Viscount went home to wait for the Colonel and his wife.*

It would be impossible to understand this sentence if we could not identify the Viscount as the person who go home to wait someone, the Colonel and his wife as the people whom are waited, and so on. By defining the thematic role of each element in the sentence can sentence meaning be identified. The simple illustration above brings the idea that thematic roles play a central role in language comprehension. The term thematic role or θ-roles, thus, is used to describe the part played by a particular entity in an event (O'Grady 1996: 286).

In most linguistic analyses, the term thematic roles are recognized as agent, theme (or patient for Finegan, 1992), source, goal, and location (O'Grady 1996: 286; Fromkin and Rodman 2003:221-223). Finegan further expands the roles by adding five more roles as presented in Table 1.

Table 1. Other Thematic Roles

experiencer	that which receives a sensory input
instrument	the intermediary through which the agent performs an action
cause	defined as any natural force that brings about a change of state
recipient	the one who or thing which receives a physical object
benefactive	for the one for whom or thing for which an action is performed
temporal	the time at which the action or state occurred

(Finegan 1992: 160-164).

The following two sentences provide simple examples of the application of these various thematic roles operate.

(2) a. The professor is just giving his last lecture to his students.
Agent *Theme* *Goal* (or *Recipient*)

b. The vice president delivered her speech in the auditorium.
Agent *Theme* *Location*

Examples (2a and 2b) illustrate how thematic roles can help identify the core meaning of each element in the sentences. But satisfying explanation about where thematic roles come from and how the grammar ensures that the appropriate thematic role is associated with each NP in a sentence is still required.

One point to underline is the fact that thematic roles originate in word meaning. Thus, if the sentence *The headmaster read the notification* contains an agent and a theme, it is because the verb *read* has the type of meaning that implies an entity that does the reading (an agent) and an entity that gets read (a theme). Since thematic roles are closely associated with the syntactic/lexical structure of a sentence, there must be some means of associating a particular thematic role with a given argument of a verb. To arrive at satisfying explanation on the appropriate thematic role, the role of each sentence element is assigned to NP based on their position in syntactic structure, with each NP receiving one and only role. This process or mechanism is what is called as *thematic role assignment*.

As Carlson and Tanenhaus (1999) put it, thematic role assignment can provide a mechanism for interaction among the syntactic processor, the discourse model, and real-world knowledge. Thematic role assignment helps create coherence in local discourse structure as well. In line with the application of this mechanism, to make early semantic interpretation and to avoid from the inevitable misassignments that occur, O'Grady provides an example of the operation of thematic role assignment through the use of complement of a preposition (1992: 287). Sentence (3) functions as example.

(3) *The laird sent the salmon from Inverness to Edinburgh.*

O'Grady proposes that in sentence (3), if we understand that *Inverness* is a source and *Edinburgh* is a goal, it is because of the difference in the meaning of the prepositions *from* and *to* that occur with these NPs. Thus, a P assigns a thematic role to its complement NP. The operation is illustrated in Figure 1.

a. PP b. PP

P NP P NP

from Inverness to Edinburgh
<source> <goal>

Figure 1. Thematic Roles Assigned by Prepositions

The present paper is intended to give depiction on sentence meaning interpretation through the mechanism of thematic role assignment. The role of each sentence element is specified by drawing phrase structure rule and assigning the role. The next is to draw deep structure and transformation structure to depict how the thematic role assignment applies in the sentences

DISCUSSION

Since this paper presents syntactic and semantic interface, it is important to start with two types of English verbs; transitive verbs and intransitive verbs. The main function of thematic roles for this discussion is to relate type of a verb to the meaning of the sentence element. The examples are English sentences taken and adapted from Carlson and Tanenhaus (1999) and O'Grady (1992) which present current perspectives on the mechanism of thematic role assignment.

Thematic Role Assignment

Following the Principle of Compositionality, the meaning resides in the sets of thematic roles can be associated with the verb. This is formulated as the following.

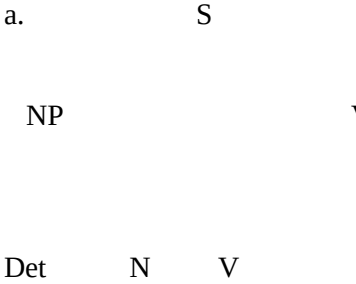
A V assigns a theme role (if it has one) to its complement NP.

A V assigns an agent role (if it has one) to its complement NP.

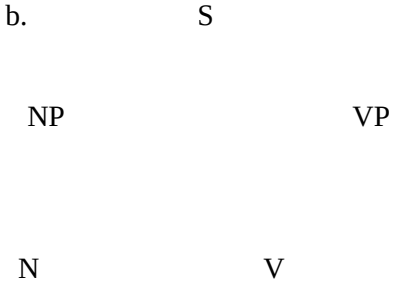
The formula is exemplified in Figure 2

(4) The police drive the car. {Agent, Theme}
The butter melted. {Theme}

a.



b.



The police	drive	the car	The butter	melted
	<ag, th>			<ag>

Figure 2. Thematic Role Assignment by Verbs

In accordance with (4), the theme role or the direct object (where present) is assigned to the V's NP complement. The agent role is assigned to the subject. When the theme is absent, the role is single, that is as agent. Here the theme roles are distinguished, which is assigned to the Vs complement, and the agent role, which is assigned to its subject (the NP immediately under S). If this is correct, then more than one thematic grid may be associated with a single verb sense; in these cases, the grids are associated with individual subcategorizations as well, though this is not always so.

Matters are slightly more complicated in the case of the assignment of thematic roles in a sentence that contains a P in addition to a V. The verb here is transitive in nature. The structure in Figure 3 illustrates the case.

		S				
NP		Infl	VP			
					PP	
Pr N		Pst	V	NP	P	NP
Jenny			bought	some flowers	for	her mother
			<ag,th>		<goal>	

Figure 3. Thematic Role Assignment in a Complex Sentence

Here, the P *to* assigns its goal role to its complement NP *her mother* while the verb *buy* assigns its theme role to the complement *some flowers* and its agent role to the subject *Jenny*. Now let us consider another case.

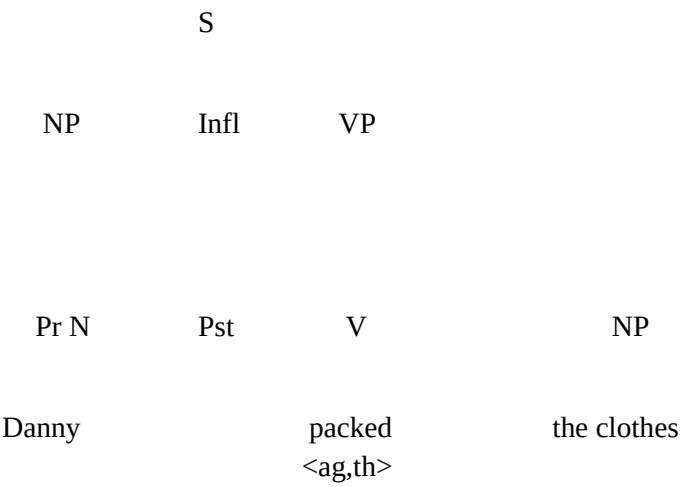
(5)

a. *Danny packed the clothes*. (__NP)

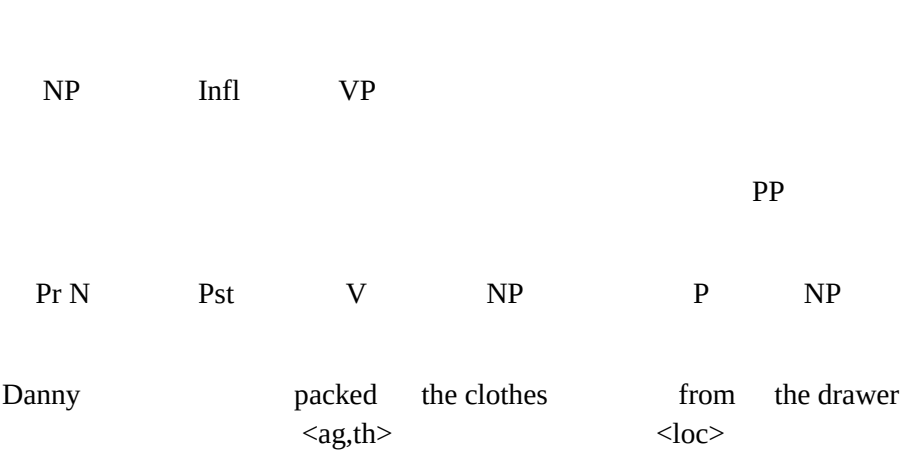
b. *Danny packed the clothes from the drawer* (__NP PP[+loc])

c. *Danny packed the clothes into the trolley* (__NP PP[+into])

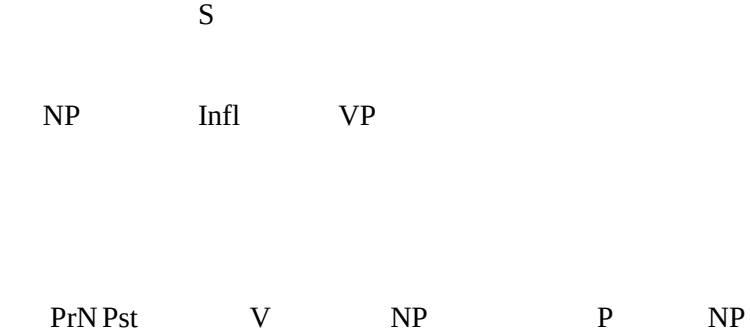
‘a.



b.



c.



Danny	packed	the clothes	into	the drawer
	<ag,th>		<goal>	

Figure 4. Thematic Role Assignment with Transitive Verb

In (5a), "pack" is a simple transitive; in (5b) it takes an object and a following locative PP; and in (5c) "pack" takes an object and a PP headed by the preposition "into." In the latter two sentences, three associated thematic roles appear: the Agent (Danny), the Theme (the clothes), and Location (the drawer). In the case of the simple transitive (5a), I assume that all three thematic roles are available there as well. Here, Danny is Agent, and the drawer could be either Location or Theme, though the former is more possible (drawer gets other things put into it). Whichever role is assigned the object in (5a), there is a clear understanding that the other role remains, though unspecified (i.e. if Location, then something was put into the drawer; if Theme, that the drawer was put somewhere, e.g. into the bedroom). In conclusion the verb in (5a) has three thematic roles associated with it as well.

The next is to discuss two additional roles: instrumentals and benefactives. Further Carlson and Tanenhaus assert that benefactives typically can show up as either "for" adjuncts or as (derived) objects, and are optional. Consider this case:

(6)

a. *Ayah bought some cookies for Maura.*

b. *Ayah bought Maura some cookies.*

c. *Ayah bought some cookies.*

In data (6), the PP in (6a) is not a subcategorized element, and so is not assigned a thematic role by the verb. In (6b), on the other hand, the Beneficiary role is assigned to Maura by the verb, as the NP Maura is in the thematic domain of the verb. This does not necessarily mean that only the verb in (6b) has a beneficiary role in its mechanism. It would be possible for the verbs in (6a) and (6c) to have the same mechanism. However, the verbs in (6a) and (6c) can be considered to have no Beneficiary role, for two reasons. First, it is not clear that a Beneficiary is a necessary participant in such actions as described in (6c); it seems one can buy something and then later decide what to do with it, or that one can buy some cookies without making it for someone, etc. Much the same can be said about English instrumentals, which have been occasionally regarded as included in the thematic domain of verb. Instrumentals, like benefactives, show an adjunct-argument change. The case is illustrated in (7):

(7)

a. *Agus cut the melon with U-shaped knife.*

b. *The U-shaped knife cut the melon with ease.*

Since "with U-shaped" in (7a) is not a subcategorized PP, it is only necessary for the verb to assign Agent to Agus and Theme to melon for an interpretation. So the Instrument role is unnecessary here. In (7b), though, the verb must assign an Instrument role to the subject as that argument is in the thematic domain of the verb. The question, then, is whether Instrument is a role in a sentence like (8):

(8) *Agus sliced the melon*.

Hereby it can be said that there is no Instrument role in example like (8). Cases can be found which allow "with" phrases but not Instrument. None of these verbs has Instrument on their grids as Instrument is never assigned to a subcategorized phrase. This does not mean, however, that the core meaning of the verb itself does not entail, or strongly imply, the presence of an instrument; entailed participation is a necessary but not a sufficient condition for the presence of a thematic role. To sum up, it can be assumed that at least two sets of thematic roles are associated with verbs like "buy" and "cut".

(9).

a. *Ayah bought Maura a present* ({Agent, Beneficiary, Theme})

b. *Ayah bought a present for Maura*. ({Agent, Theme})

c. *Agus cut the melon with aU-shaped knife*. ({Agent, Theme})

d. *A U-shaped knife cut Agus's melon*. ({Instrument, Theme})

Though the core verb meanings of (9a,b) and (9c,d) are the same, in (9b,c) the Beneficiary and Instrument roles are provided by the lexical meanings of the prepositions, and do not come from the verb itself.

Deep Structure and Transformation

In the examples above, it is still unclear whether an NP receives its thematic roles on the basis of its position in deep structure or surface structure. This is because the examples are formed without the help of movement transformations, so that each NP occupies the same position in both surface structure and deep structure. Thus, it is important to consider a case such as (10) in which a sentence is formed with the help of *Wh* Movement, which result in different sentence form, that is interrogative form. Consider sentence (10a)

(10)

a. *What must the Lady wear?*

What in (10a) is the object, and must appear in a structural position following the verb. This kind of movement is called "subject-auxiliary inversion" (SAI). Similarly, place "what" in the object or theme position and then move it to the front of the sentence will result in:

b. *The lady wears what* is considered basic sentence

c. *What the lady wears* is used to move "Wh-question what" before the lady

d. *What must the lady wear* which inserts and place the modal auxiliary "must" between " Wh-question and the agent

Sentence (10a) can be

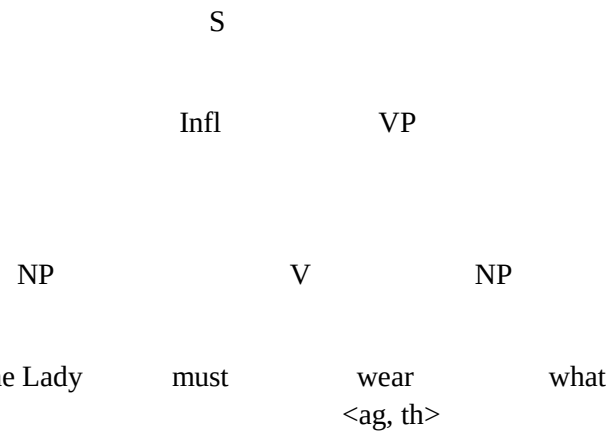


Figure 5. Thematic Role Assignment in a *wh* Question

Put it simply, sentence (10) has the deep structure. Since the theme role is assigned to the complement of V (see Figure 2 and Figure 5), it follows that the NP *what* in the above example receives this role due to its position in deep structure, not surface structure (where it occurs at the beginning of the sentence). Therefore, the notion that An NP's deep structure position determines its thematic role best describes the relevance of syntactic structure and semantic interpretation.

The statement just previously presented falls short because in (4), there is no auxiliary verb, and the verb is neither *be* nor *have*, and in (10) there is one auxiliary verb. The statement needs to be further revised to account for the data. Due to the limit of space we will not go on to revise the statement

CONCLUSION

Overall, one significant conclusion regarding the NP's structure position can be made. An NP's structure position determines its thematic role in a sentence. It goes similarly with the relevance of deep structure with the assignment of thematic role. The relevance between the deep structure and the assignment of thematic role is important to consider for two reasons. First, it shows that syntactic structure does not only represent mechanism in which words are organized into phrases, but also is relevant to semantic interpretation. Second, the fact that the position of an NP's in deep structure determines its thematic role provides additional support for the existence of deep level of syntactic structure. This, in turn, supports to the notion that there must be at least two types of syntactic rules: phrase structure rules, which form the deep structure, and transformations which convert it into surface structure.

REFERENCES

Carlson,Greg N and Michael K. Tanenhaus. 1999. *Thematic Roles and Language Comprehension.* Retrieved from www.ling.rochester.edu

Crystal D., 1995. *The Encyclopedia of Language*. Cambridge University Press.

A Set of Readings A/B. 2008. Departments of Linguistics, the Faculties, Australia National University. Unpublished

Ferretti, Todd R et al. 2003. *Thematic Role Focusing by Participle Inflections: Evidence from Conceptual Combination*. Journal of Experimental Psychology: Copyright 2003 by the American Psychological Association of Learning, Memory, and Cognition 2003, Vol. 29, No. 1, 118–127

Finegan, Edward et al. 1992. *Language, Its Structure and Use.* New South Wales: Harcourt Brace Jovanovich.

Fromkin, Victoria and Robert Rodman. 2003. *An Introduction to Language.* Orlando, Florida: Holt, Rhinehart and Winston, Inc.

O'Grady, William, et al. 1996. *Semantics: The Analysis of Meaning*. in *Contemporary Linguistics: An Introduction*. Edinburgh: Pearson Education Limited.

Parker, Frank. 1986. *Linguistics for non-Linguists*. London: Taylor and Francis Ltd.

Trueswell, John C and Michael K. Tanenhaus. 1994. *Semantic Influences on Parsing: Use of Thematic Role Information in Syntactic Ambiguity Resolution.* Journal of Memory and Language 33, 285-318 (1994). Academic Press Inc.