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# Semantics: Thematic Roles

This is an introductory level tutorial, which only addresses the relationship between a verb and its NP arguments, including those found as object of an obligatory prepositional phrase. The explanations of the examples apply to Standard English.

## Semantics: Thematic Roles

### Intuition

Human beings possess an innate ability to determine whether or not a sentence or phrase is grammatical. These judgments are not based on prescribed grammatical rules such as 'do not use double negatives' but rather on **intuitions**. For example, if asked to judge whether or not the sentence 'Batman fell' was grammatical, you would not hesitate to respond 'yes'. The same judgment would apply to the sentence 'Batman waxed the bat mobile'. You would also deem 'Batman bought a towel' as grammatical, but not 'Batman bought' or 'Batman slept the floor'. These intuitions are largely based on the syntactic and semantic properties of a verb required by a language's specific rules or *constraints*. And you know what yours are without too much reflection!

### Centrality of the Verb

Verbs are the central component of any utterance. Thus your intuitions in the sentences above were based on whether or not all the 'parts' of the verb phrase were included (or not). For instance 'sleep' cannot be followed by a direct object, and 'bought' must be. These syntactic requirements are

referred to as sub-categorization frames. Sub-categorization frames provide information about what types of phrases a verb requires. Here are some examples.

## Syntactic Properties

| Verb  | Arguments                                     | Type of Phrases   |   |
|-------|---|-------------------|---|
| love  | subject, direct object                        | (NP, NP)          | We love <b>syntax lessons</b> .                       |
| give  | subject, direct object, indirect object       | (NP, NP, PP)      | Our professor gives <b>As</b> to all her students.    |
| sleep | subject                                       | (NP)              | We never sleep in class.                              |
| want  | subject, direct object, sentential complement | (NP, NP, CP or S) | We want <b>more homework</b> to practice theta roles. |

In order for the verbs 'love' and 'sleep' to be used grammatically, they must be followed by an NP. (This is true at the surface structure level for 'sleep'.) The verb 'give' requires an NP and a PP, whereas verbs such as 'want' require an NP and/or a sentential complement (CP or S).

## Semantic Properties

As is seen below, the grammatical syntactic structure alone cannot guarantee grammaticality.

### You can say

**A** The child hit the ball.

**A** We are hoping for rain this weekend.

### You can't say

**B** \*The ball hit the child.

**B** \*We are hoping about rain this weekend.

## Semantic Selection

So we see that verbs impose both structural and semantic restrictions, which are expressed as semantic roles, or thematic roles (theta roles). The verb 'hit' requires an animate subject that intentionally carries out the 'hitting' on an object that is 'hittable'. This accounts for the fact that **A** is grammatical and **B** is not, even though the sub-categorization frame is syntactically sound. This is also true for the second row. The verb 'hope' requires a prepositional phrase as its complement, however there are semantic restrictions on which preposition can be used.

## Theta Theory

Theta theory addresses the specific semantic relationships between a verb and its arguments. Verbs assign *thematic roles* (*theta roles*) to each NP that is obligatory (**must** be included in the verb phrase). Theta theory requires that **theta criterion** be fulfilled in order for a verb to be used grammatically.

## Theta Criterion

Each argument may receive one and only one theta role, and each theta role may be assigned to one and only one argument.

THUS, there is a one-to-one relationship between arguments of a verb and theta roles.

## Theta Grid

The theta roles of each NP are stated in a verb's theta grid. This is where we see all obligatory arguments and how they are semantically related to the verb. The format for this grid is as follows:

### Examples:

- hit <agent, theme>
- offer <agent, theme, benefactive>

## Thematic Roles

The arguments which a verb assigns are referred to as Thematic or Theta Roles.

Major theta roles include:

- **Agent** – The entity that intentionally carries out the action of the verb.
- **Experiencer** – The entity that undergoes an emotion, a state of being, or a perception expressed by the verb.
- **Theme** – The entity that directly receives the action of the verb.
- **Instrument** – The entity by which the action of the verb is carried out.
- **Goal** – The direction towards which the action of the verb moves.
- **Source** – The direction from which the action originates.
- **Location** – The location where the action of the verb takes place.
- **Benefactive** – The entity that receives a concrete or abstract element as a result of the action of the verb

\*Note: *Agents* are usually the subject of a transitive, ditransitive, or unergative verb. *Themes* are mostly the direct object of a transitive or ditransitive verb. *Goals*, *source*, *locations*, *benefactives*, and *instruments* are normally embedded in a prepositional phrase. Finally, *experiencers* are usually the subject of certain verbs.

### Examples...

John hit Greg.

agent      theme

Harry brought two fish from the store.

agent                      theme                      source

The

The cookies were eaten in the kitchen by the baker.

theme                                      location                      agent

## Common Errors

### Confusing The Roles of the Experience and Theme

Students often confuse the roles of *experiencer* and *theme*. This is due to the fact that with certain verbs, it seems as though the direct object, thus *theme*, is experiencing the action of the verb. For example, the *theme* of a verb such as 'punish' undergoes some type of punishment, thus students construe this NP as an animate object that experiences whatever the punishment may be, as in (3).

(3) The frustrated principal punished **the rowdy seniors** by making them wash all the floors.

This is not necessarily an incorrect assumption, however the focus of theta assignment is on the verb and its relationship to its direct object, not the experience of the direct object. In (4), it is the 'ball' that is undergoing the action of the verb, and is thus the *theme*.

(4) Superman kicked **the ball**.

In this case, *the ball* cannot experience anything, being inanimate, thus it is clearer to understand its theta role as *theme*. In both cases, regardless of the semantic properties of the direct object, it is always the entity that receives or undergoes the action of the verb.

At the introductory level, the *theme* will most likely be the direct object of a transitive or ditransitive verb. The *experiencer* will be the subject of certain transitive verbs (5), intransitive verbs (6), and the copula (7).

(5) **Lois** smelled the pastries as she walked by the bakery.

(6) **Lois** suffered from terrible allergies.

(7) **Lois** was extremely happy about her decision to run a marathon.

In (5), *Lois* is not intentionally walking over to the pastries to smell them, but as she walks by the bakery, the aroma reaches her nose. This is a type of perception. In (6) and (7) *Lois* is experiencing emotions caused by circumstances.

### Confusing the Roles of Experience and Benefactive

Students often confuse the roles of *experiencer* and *benefactive*. This is an error similar to the previous one. First, it is important to note that the word 'benefactive' can be misleading. 'Benefactive' and 'benefit' don't necessarily share the same meaning. The *benefactive* is the entity that receives something as a result of the action of the verb. It could be \$1,000,000 or a hook punch.

(8) Spiderman delivered a powerful left-hook to **the Joker** that sent the villain across the room.  
Not a benefit!

Also, remember that the *experiencer* will be the subject of certain verbs, while the *benefactive* most often will be found in a prepositional phrase as the indirect object of the verb. (This is not the case in

double object constructions, not to be discussed here.) Second, even though the *benefactive* may undergo an experience as the result of the action of the verb, the focus is on the verb, not the *benefactive*. In (8) we can be sure that the Joker experienced pain, but again, the focus is on the fact that he received the punch as the result of the action of the verb *give*.

## Distinguishing Between Source, Goal, and Location

Distinguishing between source, goal, and location is always a challenge for students. The key is generally the preposition that precedes these NPs. The goal is the entity towards which the action of the verb moves (9). The source is the entity from which the action of the verb originates (10). The location is the entity where the action of the verb is taking place. (11).

(9) Harriet is driving **to the library** this evening.

(10) Harriet **from the library** at noon.

(11) Harriet studies **at the library** all weekend.

This will take some practice, however if you focus on the type of verb in terms of its syntactic structure and its argument requirements, you will be well on your way to mastering the basics of theta role assignment.

For more examples, [click here](#).

For practice, [click here](#).

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## Suggestions, Comments, & Questions

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