

## Argument Structure

### 1. Introduction

- **Argument structure** refers to the semantic roles assigned by a word.
- While it is most frequently discussed as a property of verbs, we will see that nouns and adjectives also have argument structures.

### 2. Thematic roles

- The semantic roles assigned by words are known as **thematic roles** or **θ-Roles**. These. Here is a list of the θ-Roles we will make the most use of in class. (We might need to introduce others at some point).

#### 1) (B&B:ch.4)

Agent	Ag	The thing that is responsible for doing the action [aka Actor]
Experiencer	Exp	The thing that experiences a mental state
Theme	Th	The thing that is moved, changed, described <sup>1</sup>
Goal	Go	The thing where an action ends
Benefactor	Ben	The thing for which which an action was done
Location	Loc	The place where the theme is
Referent	R	<i>The thing a noun refers to. (more on this below)</i>
Event	Ev	<i>Something that takes place, that happens. (more on this below)</i>

— Sidenote: in the above descriptions *thing* = entity or individual

### 3. Argument structure features

- We will be encoding the argument structure of words using a feature notation that lists the thematic roles associated with a word in structured angle < > brackets:

(1) <b>one</b> θ-role	< <u>θ-role1</u> >
<b>two</b> θ-roles	< <u>θ-role1</u> < θ-role2 > >
<b>three</b> θ-roles	< <u>θ-role1</u> < θ-role2, θ-role3 > >

- Here are some examples of the basic argument structures associated with verbs, and their argument structure features, notated in angle brackets <>.

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<sup>1</sup> It is common to further distinguish between themes and **patients**, where patients refer specifically to entites that are changed or affected by undergoing an event. We will usually ignore this distinction.

## (2) (B&amp;B:ch.4)

## a. Intransitive Verbs

*swim* <Agent>

swim:            \*The fish swam me.  
                   The fish swam.

## b. Transitive Verbs

*bite* <Agent <Theme>>

bite:            The dog bit me.  
                   \*The dog bit.

## c. Optionally transitive verbs.

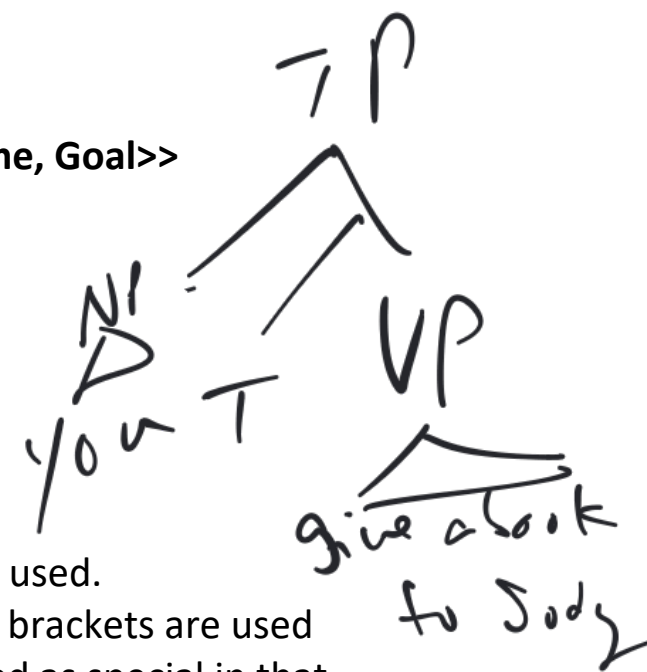
*sing* <Agent <(Theme) >>

sing:            The soloist sang the aria.  
                   The soloist sang.

## d. Ditransitive Verbs

*give* <Agent <Theme, Goal>>

give:            You gave a book to Jody.  
                   \*You gave a book.  
                   \*You gave Jody.  
                   \*You gave.



- Thematic roles are enclosed in angle brackets < >.
  - If the verb is intransitive then only set of angle brackets is used.
  - If the verb has more than one argument, then two sets of brackets are used
    - Typically, in such cases, one of the arguments is treated as special in that it appears outside the inner brackets. This is referred to as the **external argument** and we will underline it. (Note that intransitives can also have an external argument, if their sole argument is an agent, as in *swim* above.)
    - The other arguments are called **internal arguments**.
    - If you think of the syntax if a VP, the internal arguments are internal to the VP and the external argument is (usually) external to the VP in a higher projection like TP.

(2) Argument Structure notation: < External Argument < (Internal Arguments) >>

#### 4. External arguments

- In English the external argument is often the agent, if there is one.

- The external argument is the subject of a simple clause:

(3) (Bobaljik:unit 4)

- The fish** swam.
- The dog** bit me.
- The soloist** sang (a song).
- You** gave a book to Jody.

- The external argument can also usually be identified by its place in a construction like:

They consider *external argument* [predicate (to be) X].  
 or They made *external argument* [predicate X].

(4) (Bobaljik:unit 4)

- They consider **the dog** [to be biting me].
- They consider **me** [to be biting the dog]. “me” ≠ Th
- They made **the dog** [bite me].
- They made **me** [bite the dog]. “me” ≠ Th

## 5. Argument structure of Adjectives and Nouns

- Verbs aren't the only category of word that has argument structure features. Adjectives and nouns have argument structures as well. We can see this because they can be used in our test frame.

They consider *external argument* [predicate (to be) X].  
 or They made *external argument* [predicate X].

(5) Diagnosing the external argument of adjectives (Bobaljik:unit 4)

- They consider **the water** [(to be) **drinkable**].
- They consider **this building** [(to be) **beautiful**].
- They made **the water** [**drinkable**].
- They made ~~this~~ **this building** [**beautiful**].

(6) Diagnosing the external argument of nouns (Bobaljik:unit 4)

- They consider **me** [(to be) **a fool**].
- They consider **this** [(to be) **a good book**].
- They made **me** [**prime minister**].
- They made **this** [**a good show**].

- The external argument of an adjective is typically assigned the semantic role of <Theme>  
 e.g. drinkable <th>, beautiful <th>

- The external argument of a noun is a bit harder to identify. The closest we can come is that it is what the noun 'refers' to. Linguists call the thematic role associated with this external argument the <R> role (for 'referent').
- Nouns can have more complex argument structures (just like verbs), but the internal argument of a noun is always optional. The internal argument of a noun is typically introduced by the preposition 'of' in English:

(7) (Bobaljik:unit 4)

- picture* <R, <(Theme)>>  
They consider **this** [(to be) **a nice picture** (of the tower)]
- president* <R, <(Theme)>>  
They made **Matilda** [**president** (of the club)]

- Some adjectives can also have more complex argument structures (just like verbs), and the internal argument are, again, always optional. Often, such adjectives denote psychological predicates and take experiencer external arguments and theme internal arguments

(8)

- afraid* <Exp, <(Th)>>  
They consider **the children** [(to be) **afraid** (of the dogs)]
- president* <Exp, <(Theme)>>  
They made **the residents** [**afraid** (of the new rules)]