

L322 Syntax

Chapter 7: Theta Roles and the Lexicon

Linguistics 322

1. Introduction

- A. We already know that some complements are obligatory, but others are optional depending on the head and the context.
- B. Optional complements are there in the sense that they are understood, but they have no phonetic form:
 - (1) a. John likes to smoke.
 - b. Chimneys smoke when it is cold.
- C. In (1a) it is understood that cigarettes are being smoked, While in (1b) there is no understood direct object. The verb is intransitive.

2. Some Basic Terminology

- A. Predicate and Argument
 - i. C. defines a predicate as a relation between “entities” which he then calls arguments.
 - ii. Actually, the definition must go beyond this. In set theory logic all heads are predicates. This includes objects.
 - iii. Hence, V, P, and A are predicates and these take at least one argument with a few exceptions. In a sentence such as:
 - (2) It is raining.
 - iv. the argument of *rain* is not overt. It is covert, or incorporated. The basic idea here is that the argument_N[rain] is doing something—it is falling. But in English the noun is incorporated into the verb_V[rain] which has no over argument. If we write it like:
 - (3) [V [N rain]].
 - v. then V indicates an activity, and its argument is rain.

- vi. The pronominal “it” is a special kind of pronoun. Today more linguists tend to think that “it” is coindexed with *rain* and is needed to function as a subject since English normally requires a phonetic subject.
- vii. [_N rain] is a predicate which does not take any arguments. This is typical for objects.
- viii. And, as we have seen, some object function as lexical quantifiers as well as pure objects:

- (4) a. glass (object)
- b. glass of milk (lexical quantifier and object, milk = object.
- ix. Words like *acre*, *quart*, *pint*, and so forth are lexical quantifiers but are not pure objects as they have a secondary function.

B. Argument Structure

- i. Argument structure refers to the arguments that a predicate assigns.
- ii. Hedberg and I have worked out a system of level in argument structure.
 - (a). It takes the form of a rectangle with three levels (so far):

(5)

arg	Level C
arg	Level 2
arg	Level 1

- (b). Each argument is assigned by a semantic feature in the predicate.
- (c). I will have to ignore just how this works as it is a property of semantics.
- (d). Each argument is given a name. The name is arbitrary, though it does cause a fair amount disagreement.
- (e). Note that Level 1 corresponds to the direct object, level 2 to the PP complements of the predicate, and Level C to secondary complements such as instrument.
- (f). Later, we will have bring the problem of the subject into this.
- iii. The term *transitive*, *intransitive*, and *ditransitive aren't bad*:
 - (a). intransitive = no complement

- (b). transitive = one complement
 - (c). ditransitive = two complements
- iv. The most notable problem is the term 'intransitive.'
- (a). Most often it refers to overt or phonetic complements at Level 1; i.e., direct objects.
 - (b). Most linguists call the following verb intransitive:
- (6) Heloise depends on her sister.
- (c). This verb takes one complement, a PP complement. Yet by C.'s definition, it would be transitive.
 - (d). Hence, *eat* can be transitive or intransitive given this interpretation:
- (7)
- a. John likes to eat mangos.
 - b. John likes to eat.
 - (e). The problem is *eat* should logically be treated as one verb, not as two verbs, one transitive and the other intransitive.
- v. Different predicates (heads) take different kinds of complements.:
- (8)
- a. Bill is sleeping. (intransitive)
 - b. Polly likes syntax. (NP complement, transitive)
 - c. Hillary went after Jeff. (PP complement, transitive or intransitive)
 - d. Samuel kicked Delilah out of the palace. (ditransitive)
 - (a). What about the following:
- (9)
- a. Mary pushed Tom.
 - b. Mary pushed Tom off the couch.
 - (b). There is only one verb here ~~push~~.
 - (c). Yet according to C., there would have to be two. One is transitive, and the other is ditransitive.
 - (d). If we consider phonetically null arguments as full complements, then there is one verb ~~push~~. And it is ditransitive.
- vi. So, let us agree to define an intransitive head as one which takes no primary complements, null or phonetic; transitive head as one which takes one primary complement, null or phonetic, and ditransitive as one which takes two primary complements, null or phonetic.

C. Selectional Restrictions

- i. Each head places a selectional restriction on its complement(s).
- ii. They are semantically based.

- (10) a. #John brushed his ideas with a tooth brush.
b. #The earthworm was impressed with Einstein's theory of Relativity.
c. #Five sided hexagons can smell pregnant computers in the next galaxy.

D. Theta Grid

- i. Just a fancy name for argument structure
- ii. It is here where an argument is assigned to a subject position.
- iii. In Figure (5) above, each theta role is assigned to a Level. One of these arguments must be marked to be projected to the subject position of the clause.
- iv. First, the agent is assigned to Level C (Level 3).
- v. In the active voice the agent is marked to be projected to the subject position; this is commonly done by placing an underscore *undeagent*. I will highlight it in blue:

(11)

<u>arg</u>	Level C
arg	Level 2
arg	Level 1

- vi. If the voice is passive, the argument in Level 1 is marked to be projected to the subject position:

(12)

arg	Level C
arg	Level 2
<u>arg</u>	Level 1

- vii. Arguments in Level 2 cannot be projected to the subject position. This has to do with Case theory, which hasn't been introduced yet.
- viii. The default theta role at Level 1 is theme, introduced in the following section.

3. Thematic Relations and Theta Roles

- A. Read the link on theta roles on the course outline.
- B. Agent
 - i. All animate beings have a central processing unit (CPU) commonly called a brain.
 - ii. The CPU (brain) sends out a signal to certain organs including the speech organs to do something, often in response to information coming in but not necessarily.
- C. Experiencer
 - i. When information comes into the brain, the brain or the animal containing the brain is an experiencer.
 - ii. He is experiencing some phenomenon such as being cold or hot, being a listener as opposed to a speaker,
 - iii. The experiencer becomes an agent when he responds to the information coming in.
- (13)
 - a. Kyle likes Marylou.
 - b. Polly is cold.
 - c. Henrietta is sad.
 - d. Mrs. Jones felt sad.
 - e. The girl next door was touched by her father.
 - iv. In one sense, *touch* is an experiential adjective where Mary is the goal of experience and her father the source of the experience, in another it is an achievement verb where *father* is an agent.
- D. Instrument
 - i. The instrument is an object that is used to accomplish something.

- ii. It is the item or machine that makes direct contact whereas the agent is sending a message to the instrument, with some exceptions that end up being controversial.
- iii. For example, ‘John swept the floor with a broom.’ *Broom* is an instrument; it is the thing that actually makes contact with the floor moving dirt. John is the agent.
- iv. Sometimes humans can be instruments:

(14) Bill broke the window by throwing John through it.

- v. Some instruments are not associated with agents:

(15) a. The sun melted all the ice and snow.

b. The wind blew down everyone’s fence.

- vi. What about the following:

(16) a. John ran over Mary with his car.

b. John’s car ran over Mary.

- vii. Given the above definition, ‘car’ is an instrument in both examples.

viii. Some writers claim that ‘car’ is an agent in (16b).

- ix. Since when do cars have a CPU that send a message to one of its parts to release the brake and start rolling?

x. If John forgot to set the break, then isn’t it John’s fault?

xi. Mystery: what are computers? (2001: a Space Odyssey).

E. Theme

- i. Theme is an object in place or in motion.

F. Location

G. Time

H. Source

- i. Source is initial state of change.

I. Goal

- i. Goal is the terminal state of change
- J. Path
 - i. Path is an interim state in a change.
- K. Agent is a source at the causative level.
- L. Experiencer is a goal at the experience level.
- M. Source, goal, and path occur whenever t a theme under goes a change in physical state, location, time, and other semantic fields such as reason and purpose.
- N. Theoretically, these are all the theta-roles that we will actually need. Semantic features plus one of the above theta roles determine theta categories that some/ linguistics call theta roles.
 - i. For example, **patient** is often called a theta role. A patient is a theme that is undergoing a physical change.
 - ii. **Recipient** is a goal of giving or possession.
- O. External Theta Role
 - i. An external theta is one that is not part of the integral meaning of the lexical item.
 - ii. 'Integral meaning' is hard to define. It refers to the basic meaning that a lexical entry has before certain things are added on.
 - iii. Causative is a feature that plays a role in the grammar of many, many languages. It includes agents and instruments.
 - iv. In English causative is added to a basic lexical entry that results in a causative verb:
 - (17) a. The ice melted.
 - b. The sun melted the ice.
 - (18) MELT (theme)
 - v. (18) is a basic lexical entry that takes one argument. This can't be broken down any further.

- (19) CAUSE (source [agent], goal)
- vi. CAUSE takes the form of a morpheme which is often empty and is added to a noncausative verb stem to make it causative as in (17b).
 - vii. The source (agent) is assigned by the feature CAUSE, not by the integral meaning of MELT.
 - viii. source can be broken down into two parts: source_ç (inner source) and source₂ (outer source).
 - ix. the instrument is the source_ç (inner source).

P. Are there pseudo source_ç (agents)?

- (20) a. The sun melted the ice with its rays.
 b. ?#The sun used its rays to melt the ice.

Difficult to say. The sun is clearly not an agent as defined as it has no CPU, as far as I know. (20b) seems odd to me. If so, then not really a pseudo-agent.

4. The Lexicon

- A. The lexicon contains all the unpredictable information about each lexeme. Things that can be predicted are done in another part of the grammar.
- B. There are five parts to the lexicon:
 - i. phonological and orthographic representation for literate speakers
 - ii. argument structure
 - iii. syntactic information (categories, basically)
 - iv. morphological information
 - v. semantic informations (as far as it can be determined)
- C. Example:

Table 1: Lexical Entry for BOOK

BOOK	lexeme
/bʊk/, book	phonological and orthographic form
[NIL]	no arguments
Noun	category
noun stem	morphological category
bound source of reading material	semantic form (very rough)

Table 2: Lexical Entry for RUN

RUN	lexeme
/rʌn/, run	phonological and orthographic form
agent, source, path ⁿ , goal	four arguments
Verb	category
verb stem /r n/ / [+Past] ran	morphological category irregular form in past spelling of the form
move rapidly by foot	semantic form (very rough)

Table 3: Lexical Entry for RUN

S W E E P	lexeme
/swɪp/, sweep	phonological and orthographic form
agent, theme	two arguments
Verb	category
verb stem /sw ɛp/ / [+Past] swept	morphological category irregular form in past tense and nonprogressive participle. spelling
remove dirt with a broom	semantic form (very rough)

5. The Computational Component

1. Total Rubbish

6. Extended Projection Principle

1. All sentences need a subject. Essentially true, though the subject may be null. If it is null, it is probably coindexed with something.

7. Expletives

1. Pronominals called pleonastic which allegedly have no theta role.

A. Weather 'it'

(21) It is windy.

B. 'It' is probably coindexed with the noun stem WIND which underlies the adjective:

(22) It_i is [_A [_N WIND_i] y_i].

C. This coindexation is strictly speaking not entirely syntactic, The pleonastic

pronoun is coindexed with the adjective, whose ending 'y' is coindexed with WIND in the lexicon. This is a rather advanced idea.

D. In constructions such as

- (23) a. It is easy for John to be happy.
b. For John to be happy is easy.

E. Some people argue that 'for John to be happy' is the subject of the clause.

- i. If true, *the easy* assigns one theta role—a theme.
- ii. In transformational grammar, many propose that the infinitive clause in (23b) is moved to the end of the clause, and the pleonastic pronoun 'it' is inserted.
- iii. It makes more sense to say that 'it' is coindexed with the infinitive clause.
- iv. This would be called a trace.
- v. But Chomsky would have a royal conniption fit over this analysis. He has this funny idea that traces can't move downwards (to within the VP, here).
- vi. Hogwash!
- vii. Or we could derive it directly with a proviso that it must be licensed by a subject, one which has no lexical meaning: the expletive pronoun *it* and *there*. This would satisfy the Extended Projection Principle.
- viii. Some argue that the infinitive clause is in the topic position, in which case there is no phonetic subject. The topic licenses a mute subject.
- ix. This argument has not been resolved yet.
- x. I prefer the topic analysis.

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Course Outline

<http://www2.sfu.ca/person/dearmond/322/course.outline.322.htm>