

Class notes for Linguistic data modeling 2 At IIIT-Hyd 07/04/2020

Reference:

A dependency Grammar of English: An introduction and Beyond by Timothy Osborne (2019)

Valency:

Valency is the notion that content verbs and other types of predicates have combinatory potential; they tend to combine with a certain number of other linguistic units of a certain type.

Valency is in part a semantic concept, for predicates are viewed as opening slots for their arguments.

Valency is not, though, purely a semantic concept, but rather it is also a syntactic notion.

Semantic vs. syntactic valency

- a. The submarine sank a ship.
- b. A ship was sunk by the submarine.
- c. the sinking of a ship by the submarine
- d. the submarine's sinking of a ship
- e. a ship's sinking by the submarine
- f. the submarine sinking a ship
- g. the submarine having sunk a ship
- h. a ship having been sunk by the submarine

Despite the varying syntactic structures in which the predicate sink appears in these examples, the arguments of sink remain consistent.

The predicate sink in its various forms is combining with its two arguments the submarine and a ship.

The semantic valency of a given content word remains consistent even as the form of the content word and the syntactic structures that contain it vary in significant ways.

By focusing more on the syntactic notion of valency, verbs of every type can be deemed to have valency.

Pure function verbs (auxiliary verbs), light verbs, and full content verbs all have combinatory potential that one can characterize in terms of valency.

- 1. Finite vs. nonfinite forms
- 2. Active vs. passive forms
- 3. Control verbs
- 4. Raising verbs
- 5. Auxiliary verbs
- 6. Light verbs

A verb can be aivalent, monovalent, divalent, or trivalent,

e.g.

(1) a. It rains (– Avalent)	RAIN[0]
b. They slept. (– Monovalent (i.e. intransitive))	SLEEP[NP1]
c. We discussed the issue. (– Divalent (i.e. transitive))	DISCUSS[NP1, NP2]
d. Sam gave them a pie. (– Trivalent (i.e. ditransitive))	GIVE[NP1, NP2, NP3]
e. Tom put the money in the box (-Trivalent)	PUT[NP1, NP2, NP3]

The valents of valency-carriers within the brackets are always listed in the left-to-right order that reflects the following ranking:

subject > first object > second object > prepositional object

1. Finite vs. nonfinite verbs:

As with most theories of syntax, the distinction between finite and nonfinite verbs is crucial to the dependency grammar.

Finite Verbs: (i) finite verbs are the locus of morphological markers of number, person, gender, tense, mood, and voice in languages that have such morphology

(ii) It is the root of all clause structure.

Nonfinite verb forms (infinitive, past/passive participle, progressive participle, gerund) usually lack (most of) morphological markers

2. Active vs. passive forms

The shuffling of valents occur here.

The passive involves changing an object of the active (NP2) to the subject, and the subject of the active (NP1) to the object of the preposition by in English.

3. Clausal valents

Some predicates can or must take clausal valents, whereas others cannot,.

(1) a. Jill thinks that it's too hot.

b. *Jill avoids that it's too hot. (compare: Jill avoids the heat.)

The predicate thinks in (1a) takes an object valent that has the syntactic status of a clause, whereas the predicate avoid in (1b) can hardly take a clausal object valent.

The so-called psychological verbs, or just psyche verbs (e.g. anger, annoy, disgust, frustrate, impress, please, upset, scare, surprise, etc.), are a large class that can take clausal subject valents.

4. Control

A large class of verbs, adjectives, nouns, and other categories take a verbal valent in addition to one or two nominal valents.

One can distinguish between two broad types of expressions in this area:

control predicates vs. raising expressions.

Control predicates semantically select all their valents,

whereas raising expressions have a valent that they do not semantically select

Four types of control predicates can be acknowledged:

1. S-S (subject to subject) control,
2. S-O (subject to object) control,
3. O-S (object to subject) control, and
4. O-O (object to object) control.

S-S	ask, attempt, available, begin, crazy, eager, enjoy, fit, a fool, get, go, happy, in a position, modal auxiliaries used non-epistemically (be, can, could, dare, may, must, need, shall, should), on hand, refuse, reluctant, start, stop, threaten, try, too/enough+adjective, willing
S-O	appeal, ask, block, bring, build, call, encourage, find, force, hear, help, hire, listen, motivate, name, persuade, prevent, produce, prompt, receive, rent, see, send, stop, take, tell, train
O-S	at one's disposal, available, a beauty, delicious, demand, deserve, fit, fragrant, heavy, a hornet's nest, light, on hand, a marvel, melodious, merit, a pigsty, pretty, pungent, ready, rich, slippery, soft, tasty, ugly, unavailable, too+adjective, warrant
O-O	borrow, bring, build, buy, choose, create, dice, find, give, keep, lend, loan, look for, produce, receive, rent, seek, send, take, use, write

Subject-Subject Control: **Susan** wants to eat. He asked to stay

Object-Subject Control: We asked **him** to go, We chose **you** to read the book, He asked us to stay

Subject-Object Control: **Mary** is pretty to look at, **These nuts** are tasty to snack on

Object-Object Control: We chose **a book** to read, I bought **a game** to play

5. Raising

There are four types of raising, and they mirror the four types of control discussed in the previous section.

1. S-S (subject from subject) raising,
2. S-O (subject from object) raising,
3. O-S (object from subject) raising, and
4. O-O (object from object) raising.

The central trait of each of these types of raising is that (at least) one of the valents of the raising expression at hand is not an argument of that expression

S-S raising:

- a. It appears that he lied.
- b. He appears ___ to have lied.

S-O raising:

- a. It is easy to admire Susan
- b. Susan is easy to admire

O-S raising:

- a. We assume that they did it.
- b. We assume them ___ to have done it.

O-O raising:

- a. Susan has a girlfriend to find, We have a house to paint
- b.

S-S	appear, apt, be, begin, cease, come, happen, likely, modal auxiliaries used epistemically (can, could, dare, may, might, must, need, will, would, shall, should), prove, pure auxiliaries (be of voice, be of aspect, dummy do, have of aspect), seem, semi-auxiliaries (come, going to, have to, used to, supposed to), a sure bet, tend, threaten, unlikely, start, stop
S-O	assess, believe, consider, deem, judge, make, need, prevent, see, stop, view, want
O-S	bad, be, best, a bitch, cost, difficult, easy, fun, good, hard, merit, a pain in the ass, a snap, take, tough, worst
O-O	be, have, get

6. Auxiliaries

First, the valency of copular be is examined. Copular be is semantically empty, which means it does not semantically select its valents, and as far as the syntactic category of its valents goes, it is very flexible. Finite forms of be place few syntactic restrictions on their subject and complement valents; these valents can be nouns, adjectives, prepositions, adverbs, or subordinators, e.g.

- a. James is a plumber. – NP valent
- b. James is smart. – Adjective valent
- c. James is in the cellar. – PP valent
- d. The renovation is soon. – Adverb valent
- e. The cellar is where the problem is. – Clausal valent

The verbs taste, look, sound, and feel are among the verbs that behave similar to copular be insofar as they take a predicative adjective as their second valent, just as the copula be often takes an adjectival valent.

These verbs are, however, more unlike copular be than they are like it. They semantically select their subject valent.

e.g. *There tastes good, *There look funny, etc.

Based on this observation, one should conclude that these verbs are not copular verbs in the sense that be is a copular verb. They are, rather, content verbs. What is unusual about them is simply the necessity for them to take an adjective or adverbial valent.

7. Light verbs

The distinguishing trait of light verbs is that they are light on semantic content. They look like content verbs, but they actually cannot be construed as content verbs because they alone lack the necessary content of a predicate. They actually form a predicate with a child noun. Many light verb predicates correspond to a single content verb,

e.g. bathe ↔ take a bath,

discuss ↔ have a discussion,

hug ↔ give a hug,

kiss ↔ give a kiss,

shower ↔ take a shower,

smoke ↔ have a smoke,

walk ↔ take a walk, etc.

As a closing note, it must be emphasized that each language codes their information using any of these valency concepts as far as verbs (as head) are concerned. The most important concept in the approach is the distinction between argument and valent. By basing the account of valency on the valent notion, it

has become possible to extend the analysis of valency beyond content verbs and adjectives to most all word categories.