

Chapter 1

Syntactic Dependency Guide

1.1 Introduction

The guide lists the dependencies produced by this parser. Many of the dependencies correspond exactly to a similarly named dependency from the Stanford parser's scheme. The Stanford parser's scheme may be found at: nlp.stanford.edu/software/dependencies_manual.pdf

1.2 Contrast with the Stanford Dependency Relations

List of dependencies not available in Stanford typed dependencies

ccinit - Initial coordinating conjunction

cleft - Cleft clause

infmark - Infinite marker ('to')

objcomp - Object complement

postloc - Posterior location modifier

sccomp - For so-that constructions

whadvmod - Wh- adverbial modifier

List of dependencies currently not included from Stanford typed dependencies

abbrev - Abbreviation. Treated as 'appos' (Appositive) instead.

attr - Attributive. For WHNP complements of copular verbs.

auxpass - Passive auxiliary

aux - Auxiliary

csubjpass - Clausal subject of passive construction. See 'csubj.'

nsubjpass - Nominal subject of passive construction. See 'nsubj.'

ref - Referent (semantic dependency that doesn't occur in Stanford basic representation; used with relative clauses)

rel - Relative (used with relative clauses)

xsubj - Controlling subject (semantic dependency)

List of dependencies included but treated differently in some significant way

cc - Coordination

conj - Conjunction

cop - Related to copular verbs

number - Element of a compound number

1.3 Dependency List

1. acomp — Adjectival Complement

Ex: The car looked red. (looked-acomp->red)

2. advcl — Adverbial Clause

See also: mark

Note that the main verb is treated as the head of the adverbial clause and not the subordinating conjunction. This is because some subordinating conjunctions such as ‘while’ can often be omitted.

Ex: While scaling the fish, Joe thought of home. (thought-advcl->scaling)

3. advmod — Adverbial Modifier

Ex: They ran often. (ran-advmod->often)

4. agent — Agent

Ex: The castle was razed by the marauders. (razed-agent->marauders)

5. amod — Adjectival Modifier

‘amod’ is for prenominal adjectival modifiers.

Ex: The old man walked with a cane. (man-amod->old)

6. appos — Appositive

Ex: Joe Rich, the new CEO, did a good job. (Rich-appos->CEO)

7. cc — Coordination

See also: conj

‘cc’ and ‘conj’ links are treated different than in the Stanford basic representation. See the examples for illustration.

Ex: Joey, James, Jack, and Jill went up the hill. (Jack-cc->and) vs. Stanford:(Joey-cc->and)

Ex: The baby learned to crawl, walk, and then talk. (walk-cc->and) vs. Stanford:(crawl-cc->and)

Note: In the future, the parser may be changed to treat the coordinating conjunction as the head.

8. ccinit — Initial Coordinating Conjunction

Dependency for coordinating conjunctions (CCs) that occur at the beginning of sentences and do not join with any other element within the same sentence.

Under the Stanford scheme, these would be given a ‘dep’ label.

Ex: And the people rejoiced. (rejoiced-ccinit->And)

Ex: But few could have anticipated what was coming next. (anticipated-ccinit->But)

9. ccomp — Clausal Complement with Internal Subject

See also: xcomp

Ex: He said [that] the cat ran away. (said-ccomp->ran)

Ex: He was surprised by the fact [that] the cat barked. (fact-ccomp->barked)

10. csubj — Clausal Subject

Compare with: nsubj

Ex: Training a bear will frustrate most people. (frustrate-csubj->Training)

11. cleft — Cleft clause

It was the lack of sunlight that bothered him. (was-cleft->bothered)

12. combo — Indicates that the two words functionally operate as a single token

Under the Stanford basic dependency scheme, these would be given a 'dep' label. Using Stanford collapsed dependencies, these would be combined together.

Ex: He ran out of the house. (out-combo->of)

13. complm — Complementizer

See also: ccomp

Ex: He was surprised by the fact that the cat barked. (barked-complm->that)

14. conj — Conjunction

See also: cc

‘conj’ (and also ‘cc’) attach differently in this scheme than they do in the Stanford basic scheme. These differences are illustrated by the examples.

Ex: Joey, James, Jack, and Jill went up the hill. (Joey-conj->James)(James-conj->Jack)(and-conj->Jill) vs. Stanford:(Joey-conj->James)(Joey-conj->Jack)(Joey-conj->Jill)

Ex: The baby learned to crawl, walk, and then talk. (crawl-conj->walk)(and-conj->talk) vs. Stanford:(crawl-conj->walk)(crawl-conj->talk)

Note: In the future, the parser may be changed to treat the coordinating conjunction as the head.

15. cop — Complement of Copular Verb

Under this scheme, the ‘cop’ link occurs in the direction opposite that of the Stanford scheme.

Ex: The apple is red. (is-cop->red)(is-nsubj->apple) vs Stanford:(red-cop->is)(red-nsubj->apple)

16. dep — Unspecified dependency

Some dependencies that would be labeled as ‘dep’ in the Stanford scheme are given specific labels in this scheme. These include ‘ccinit’ and ‘combo.’

Ex: The "Do it Yourself" slogan rang true. (slogan-dep->Do)

17. det — Determiner

Ex: The man was asleep. (man-det->The)

18. dobj — Direct Object

See also: iobj

Ex: Joe ate an apple. (ate-dobj->apple)

Ex: Joe writes books. (writes-dobj->books)

19. expl — Expletive

Used for existential ‘there’ constructions.

Ex: There was a fight. (was-expl->There)

Ex: There is a time and a place for everything. (is-expl->There)

20. infmark — Infinitive Marker

In the Stanford dependency scheme, these would be labeled as ‘aux’.

Ex: They wanted to go to the store. (go-infmark->to)

21. infmod — Infinitive Modifier

Used for infinitive 'to' modifier.

Ex: The trees to cut were very wide. (trees-infmod->cut)

22. iobj — Indirect Object

See also: dobj

Ex: John gave Mary the ball. (gave-iobj->Mary)

Ex: John bought Mary flowers. (bought-iobj->Mary)

23. mark — Subordinate Clause Marker

See also: advcl

Ex: If they can parse it, they can read it. (parse-mark->If)

Ex: The clown ran while juggling the balls. (juggling-mark->while)

24. measure — Measure modifier

Ex: It happened three years earlier. (earlier-measure->years)

25. neg — Negator

Ex: They did not begin on time. (begin-neg->not)

26. nn — Noun-Noun Compound

Ex: The dish rag was wet. (rag-nn->dish)

Ex: Unfortunately, the cat food was also wet. (food-nn->cat)

27. nsubj — Nominal Subject

Unlike Stanford, there is not a separate label for nsubjpass.

Ex: The man ran to the store. (ran-nsubj->man)

28. num — Numeral Modifier

Ex: The three bears were angry. (bears-num->three)

29. number — Multi-word Number Modifier

The number relation is used for compound numbers — that is, numbers that modify other numbers. Unlike Stanford, ‘number’ is not used when modifying currency units; ‘num’ is used instead.

Ex: The six hundred men were well armed. (hundred-number->six)

30. objcomp — Object Complement

The ‘objcomp’ relation occurs for a handful of verbs (usually linking verbs).

Ex: The pot called the kettle black. (called-objcomp->black)

31. parataxis — Parataxis

While there is no clear difference in the definition between ‘parataxis’ in the Stanford scheme and in this scheme, ‘parataxis’ is, in general, used less frequently under this scheme.

Ex: Someone was in the kitchen with Dinah – this has happened before – singing on the ol’ banjo. (was-parataxis->happened)

32. pcomp — Clausal complement of Preposition

Ex: Joe ran away with the people calling after him. (with-pcomp->calling)

33. pobj — Object of Preposition

Ex: Joe ran with a crutch. (with-pobj->crutch)

34. poss — Possessive Relationship

Ex: Joe’s crutch broke. (Joe-poss->crutch)

35. possessive — Possessive Indicator

Ex: Joe’s crutch broke. (Joe-possessive->’s)

36. postloc — Posterior Location Modifier

The ‘postloc’ relation is used in cases where the following word specifies the location of the preceding word. Typically there is a separating comma and both words indicate locations, with the second word being the less precise. Under the Stanford scheme, this relation would either be ‘dep’ or ‘appos.’

Ex: The Washington, DC, company was well-funded. (Washington-postloc->DC)

37. preconj — Pre-conjunction

Used for the terms ‘either’, ‘neither’, and ‘not only’.

Ex: The man would either eat the food or starve. (eat-preconj->either)

38. predet — Pre-determiner

Ex: All the kids were playing. (kids-predet->All)

39. prep — Preposition

Ex: The monkey sat in the tree. (sat-prep->in)

40. prt — Particle

Ex: The workers set up the tent. (set-prt->up)

41. punct — Punctuation

Ex: The man jumped. (jumped-punct->.)

42. purpcl — Purpose (or Result) Clause

Ex: The monkey climbed the tree to get bananas. (climbed-purpcl->get)

43. quantmod — Quantifier Modifier

Ex: The monkeys drank about seven gallons of moonshine. (seven-quantmod->about)

Ex: Some matinees now cost nearly \$10. (10-quantmod->nearly)

44. partmod — Participle Modifier

Ex: The trees cut by the loggers were very old. (trees-partmod->cut)

45. rcmmod — Relative Clause Modifier

Ex: John, who had sixteen kids, was always tired. (John-rcmod->had)

Ex: John found the kid whose toys had been left out. (John-rcmod->left)

Ex: The day [that] the wall fell will live on in memory. (day-rcmod->fell)

46. scomp — ‘Sufficiency’ Clausal Complement

This relation is used for clauses that complement certain threshold words (e.g., so and such).

Ex: So many people went in the elevator that it wouldn’t move. (went-scomp->move)

47. tmod — Temporal Modifier

Ex: The auction Friday drew a large crowd. (auction-tmod->Friday)

Ex: Last January, even the fireplace froze. (froze-tmod->December)

48. vch — Verbal Chain

Ex: His friend had seen the movie before. (had-vch->seen)

Ex: The monkey will climb the tree later. (will-vch->climb)

49. whadvmod — Wh- Adverbial Modifier

Under the Stanford scheme, ‘advmod’ is used instead. Since Wh- adverbs (e.g., how, why, where) can be used in ways that other adverbs cannot, such as to introduce certain relative clauses, they were assigned their own relation.

Ex: Why did the chicken cross the road. (cross-whadvmod->Why)

Ex: Joe thought about the reason why he did it. (did-whadvmod->why)

50. xcomp — Clausal Complement with External Subject

See also: ccomp

Used for nonfinite clauses (typically headed by a VB or VBG).

Ex: Joe is planning to go camping. (planning-xcomp->go)

Ex: Joe wants to try rafting as well. (wants-xcomp->try)