

Sketch Grammar for English, Penn Treebank tagset (TreeTagger version) # with semantic relations from Pilar León Araúz # ver. 3.3 # # Changelog # - Bugfix: changed PRP to PP. [13 October 2008, Jan Pomikalek] # - Modified to allow "my" "you" etc (tag=PP\$) in NPS. Looks like a typo (with # PRP\$ not PP\$) in previous version. [6 May 2008, Adam Kilgarrieff] # - Modified so that definitions don't use lempos which is not always # available. [Jan Pomikalek] # - Modified to TreeTagger tagset. [Niels Ott] # - fixed reflexive,passive,it+ relations, should be unary [24 March 2011 Diana McCarthy] # - Modified so modifier/modified is more general (not distinguishing noun-modifiers and adj-modifiers for nouns, # and covering adverbs too [27 July 2011 Adam Kilgarrieff] # - Both TRINARY dualized per Adam's request # TODO: allow DUAL TRINARY in Manatee and use it here then [15 December 2012 Milos Jakubicek] # - TRINARY dualized using DUAL (requires Manatee 2.74) [18 February 2013 Milos Jakubicek] # - allow proper nouns in sketches ("NN.?.?" -> "N.*") [22 Feb 2013 Vojtech Kovar] # - human-readable gramrel names [26 Nov 2015 Jan Michelfeit] # - macros and joined possessives [29 Feb 2016 Jan Michelfeit] # - renamed relations for complements # - fixed/split "modifies" relation for individual PoS [01 Sep 2016 Milos Jakubicek] # - fixed pro_possessor relation (switched labels) [02 Jan 2017 Vojtech Kovar] # - added adv-adv modifier and split UNIMAP for modifies [11 Jan 2017 Vojtech Kovar] # - added semantic relations from Pilar [3 May 2017 Vojtech Kovar] # - added WSPOSLIST [13 Jul 2017 MichalC]

#Adapted by Sandra Young to look at specific semantic entities 2018

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divert(-1)

define(`NOUN',`"N.*[^Z]"')

define(`ADJECTIVE',`"JJ.*"')

define(`VERB',`"V.*"')

define(`VERB_BE',`"VB.*"')

define(`VERB_HAVE',`"VH.*"')

define(`ADVERB',`"RB.*"')

define(`NOT_NOUN',`[tag!="N.*"]')

define(`DETERMINER',`[tag="DT"|tag="PPZ"]')

define(`MODIFIER',`[tag="JJ.*"|tag="RB.*"|word=","]')

define(`WHO_WHICH_THAT',`[tag="WP"|tag="IN/that"]')

define(`SCI',`[scientific_name!=""]')

divert
```

*STRUCTLIMIT s

*DEFAULTATTR tag

*WSPOSLIST ",noun,-n,verb,-v,adjective,-j,adverb,-r"

*FIXORDER ;modifiers of "%w";nouns modified by "%w";adjectives modified by "%w";verbs modified by "%w";objects of "%w";verbs with "%w" as object;subjects of "%w";verbs with "%w" as subject;"%w" and/or ...;prepositional phrases;adjective predicates of "%w";subjects of "be "%w"";"%w" is a ...;instances of "%w";particles after "%w";particles after "%w" with object;objects of "%w %(3.lemma)";verbs with particle "%(3.lemma)" and "%w" as object;pronominal objects of "%w";pronominal subjects of "%w";%w's ...;possessors of "%w";pronominal possessors of "%w";wh-words following "%w";infinitive objects of "%w";-ing objects of "%w";in passive;as reflexive;it's "%w" to ...;complements of "%w";verbs complemented by "%w";adjectives after "%w";verbs before "%w"

="%w" and/or ...

*UNIMAP and/or *SYMMETRIC

1:SCI [word=","]{0,1} [word="and" | word="or" | word=","] DETERMINER{0,1} "CD"{0,2}
MODIFIER{0,3} NOUN{0,2} 2:SCI NOT_NOUN

1:VERB [word=","]{0,1} [word="and" | word="or" | word=","] ADVERB{0,2} 2:VERB & 1.tag =
2.tag

1:ADJECTIVE [word=","]{0,1} [word="and" | word="or" | word=","]{0,1} ADVERB{0,2}
2:ADJECTIVE & 1.tag = 2.tag

*DUAL

="%w" is a .../... is a "%w"

*UNIMAP predicate_of/predicate

1:SCI WHO_WHICH_THAT? ADVERB{0,5} VERB_BE ADVERB{0,2} DETERMINER{0,1} "CD"{0,2}
MODIFIER{0,3} NOUN{0,2} 2:SCI NOT_NOUN

*DUAL

=modifiers of "%w"/nouns modified by "%w"

*UNIMAP modifier/n_modifies

2:SCI MODIFIER{0,3} NOUN{0,2} 1:SCI NOT_NOUN

*SEPARATEPAGE prepositional phrases *DUAL *TRINARY #want to adapt to include just species of etc.

="%w" %(3.lemma) .../... %(3.lemma) "%w"

1:[tag="N.*" | tag="JJ.*"] 3:"IN" DETERMINER{0,1} "CD"{0,2} MODIFIER{0,3} NOUN{0,2} 2:NOUN
NOT_NOUN

1:VERB ADVERB{0,2} 3:"IN" DETERMINER{0,1} "CD"{0,2} MODIFIER{0,3} NOUN{0,2} 2:NOUN
NOT_NOUN

Pilar's relations start here

*DUAL

="%w" is the generic of.../"%w" is a type of...

#1 HYPO is a type of HYPER

2:SCI [tag!="V.*"]{0,7} [lemma="be|,|:|belong|\\(|" [tag!="V.*"]{0,7}
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"] [word="of"] [tag!="V.*"]{0,7} 1:SCI

#2 type of HYPER includes/is HYPO

("DT"|"CD"|[word="some|several|any|various|distinct|different"]) "RB.*" "JJ.*"
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"] [word="of"] [tag!="V.*|IN"]{0,5} 1:SCI []{0,3}
[lemma="include|be"] [tag!="V.*|IN.*"]{0,7} 2:SCI

#3 type of HYPER ranges from HYPO to HYPO

("DT"|"CD"|[word="some|several|any|various|distinct|different"]) "RB.*" "JJ.*"
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"] [word="of"] [tag!="V.*|IN"]{0,5} 1:SCI []{0,3}
[lemma="range"] [word="from"] [(tag!="V.*|IN.*|CD")|word="to"]{0,7} 2:SCI

#4 HYPER types?, ranging from HYPO to HYPO

1:SCI
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"]? ",|\\(|"? [word="ranging"] [word="from"]
[(tag!="V.*|IN.*|CD")|word="to"]{0,7} 2:SCI

#5 HYPER types include HYPO

1:SCI

[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"] ",|\("? [word="which"? "MD"*
[lemma="include"] [tag!="V.*|CD"]* 2:SCI

#6 HYPER such as HYPO

1:SCI [tag!="V.*"]* [word="such"] [word="as"] [tag!="V.*"]* 2:SCI

#7 HYPER including HYPO

1:SCI [tag!="V.*"]{0,5} [word="including"] [tag!="V.*"]* 2:SCI

#8 HYPER, especially HYPO

1:SCI [word="",|\("]

[word="especially|primarily|namely|usually|typically|characteristically|generally|mainly"]
[tag!="V.*|IN"]* 2:SCI

#9 HYPO and other HYPER

2:SCI [tag!="V.*"]{0,7} [word="and|or"] [word="other"] "RB.*" "JJ.*"
([lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"])? [tag!="V.*"]{0,5} 1:SCI

#10 HYPO is defined/classified as HYPER

2:SCI [tag!="V.*"]{0,5} "MD"? [lemma="be|,|\("] [word!="not"]?
[word="defined|classified|categorized|regarded"] [word="as"] "DT.*|RB.*|JJ.*"
([lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"])? [tag!="V.*"]{0,2} 1:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"]

#11 x classify/regard/categorize HYPO as HYPER

[lemma="classify|regard|categori.e"]
[tag!="IN"](("DT"|[word="some|several|any|various|distinct|different"]) [tag!="V.*"]*
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"] [word="of"])? [tag!="V.*"]* 2:SCI [word="as"]
[tag!="V.*|IN"]* 1:SCI

#12 HYPER classified in (x types of) HYPO

1:SCI ",|\("? [tag="IN/that|WDT"]? "MD"* [lemma="be|,|\("] "RB.*"*
[word="classified|categori.ed"] ([word="by"] [tag!="V.*"]*)? [word="in|into"] [tag!="V.*"]*
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"]? [tag!="V.*"]* 2:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"]

#13 HYPER divided into (x) categories (:|of) HYPO

1:SCI ",|\("? [tag="IN/that|WDT"]? [lemma="be|,|\("] [word="divided"] [tag!="V.*"]*
[word="in|into"] [tag!="V.*"]*
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"] [tag!="V.*"]* 2:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"]

#14 type of HYPER is|,|(known/referred/termed/called (to) (as) HYPO

[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
ubgroup|subclass|subcategory|subspecies"] [word="of"] 1:SCI ",|\("? [tag="IN/that|WDT"]?
[lemma="be|,|\("] "RB.*"* [word="known|referred|termed|named|called"] [word="to"]?
[word="as"]? [tag!="V.*"]* 2:"N.*"

#15 HYPO is a HYPER that

2:"N.*" [tag!="V.*"]{0,4} [lemma="be"] "DT.*" "RB.*"* "JJ.*"* 1:SCI [tag="IN/that|WDT"]

#16 define HYPO as a HYPER

```
[lemma="define"] "DT.*"? [word="and"]? [tag!="V.* | IN"]{0,3} 2:"N.*" [word="as"] "DT.*"?  
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s  
ubgroup|subclass|subcategory|subspecies"]? [word="of"]? [tag!="V.*"]{0,2} 1:[tag="N.*" &  
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s  
ubgroup|subclass|subcategory|subspecies"]
```

#17 HYPO refers to HYPER

```
2:SCI [tag!="V.*"]{0,4} [lemma="refer"] [word="to"] "DT.*"?  
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s  
ubgroup|subclass|subcategory|subspecies"]? [word="of"]? [tag!="V.*"]{0,3} 1:[tag="N.*" &  
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s  
ubgroup|subclass|subcategory|subspecies"]
```

#18 X type of HYPER: HYPO

```
("DT"|"CD"|[word="some|several|any|various|distinct|different"]) []{0,2}  
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s  
ubgroup|subclass|subcategory|subspecies"] [word="of"] 1:SCI[word=":" ] [tag!="V.*"]* 2:SCI
```

*DUAL

="%w" has part.../"%w" is part of...

#1 WHOLE composed of PART

```
1:SCI [tag!="V.*"]{0,7} ([tag="IN/that|WDT"] [tag="V.*"])? [tag!="V.*"]{0,7} [lemma="be"]?  
"RB.*"* [word="comprised|composed|constituted"] "RB.*"* ([word="in"] [tag="JJ.*"]?  
[lemma="part"])? [word="of|by"] [tag!="V.*"]{0,7} 2:SCI
```

#2 WHOLE comprises PART

```
1:SCI  
[lemma="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|s
```

ubgroup|subclass|subcategory|subspecies"]? ",|\("? [tag="IN/that|WDT"]? [word="",|\("?
 "RB.*" [lemma="comprise" & tag!="VVN"] [tag!="V.*"]* 2:[tag="N.*" &
 lemma!="part|component|element|fraction|constituent|piece|portion|percent|percentage
 |region|area|zone|section|segment|fragment|content|concentration|volume|load|amount
 |mixture|composition|level"]

#3 PART composes WHOLE

2:SCI [tag!="V.*"]{0,7} ([tag="IN/that|WDT"] [tag="V.*"])? [tag!="V.*"]{0,10}
 [lemma="compose" & tag!="VVN"] [tag!="V.*"]{0,7} 1:[tag="N.*" &
 lemma!="part|component|element|fraction|constituent|piece|portion|percent|percentage
 |region|area|zone|section|segment|fragment|content|concentration|volume|load|amount
 |mixture|composition|level|threat"]

#4 PART is/constitutes part/element of WHOLE

2:SCI [tag!="V.*"]{0,5} ([tag="IN/that|WDT"] [tag="V.*"])?
 [tag!="V.*"]{0,5}[lemma="be|constitute"] [tag="DT|JJ.*|RB.*|IN|," &
 word!="in|on|at|though|but|over|with"]*
 [lemma="part|component|element|fraction|constituent|piece|portion|percent|percentage
 |section|segment|fragment|content|volume|load|mixture|composition|level|proportion|th
 reat"] [word="of"] [tag!="V.*"]{0,7} 1:SCI

#5 WHOLE has/includes x part :/such as/namely PART

1:SCI [tag!="V.*"]{0,5} ([tag="IN/that|WDT"] [tag="V.*"])? [tag!="V.*"]{0,5}
 [lemma="have|include|possess"] [tag!="V.*"]{0,5}
 [lemma="element|part|component|constituent|piece|portion|section"] ",|\("? ([tag=":" |
 [word="such"] [word="as"] |
 [word="especially|primarily|namely|usually|typically|characteristically|generally|mainly"])
 [tag!="V.*"]{0,7} 2:"N.*"

#6 WHOLE has/includes a x fraction of PART

1:SCI [tag!="V.*"]{0,5} ([tag="IN/that|WDT"] [tag="V.*"])? [tag!="V.*"]{0,5}
 [lemma="have|include|possess"] [tag!="V.*"]{0,5}
 [lemma="fraction|percentage|percent|portion|amount|fragment|content|concentration|vo
 lume|load|mixture|composition|proportion"] [word="of"] [tag!="V.*"]{0,5} 2:[tag="N.*" &

lemma!="fraction|percentage|percent|portion|amount|fragment|content|concentration|volume|load|mixture|composition|proportion"]

#7 WHOLE part such as PART

1:"N.*"
[lemma="element|part|component|constituent|piece|portion|section|fragment|content"]
",|\("? [word="such"] [word="as"] [tag!="V.*"]{0,7} 2:"N.*"

#8 part of the WHOLE :/such as/namely PART

[lemma="element|part|component|constituent|piece|portion|section|fragment|content"]
[word="of"] [tag!="V.*"]{0,5} 1:"N.*" [tag!="V.*"]{0,5} ",|\("? ([tag=":" | [word="such"]
[word="as"] |
[word="especially|primarily|namely|usually|typically|characteristically|generally|mainly"])
[tag!="V.*"]{0,7} 2:"N.*"

#9 a part of the WHOLE is PART

("DT"|"CD"|[word="some|several|any|various|distinct|different"]) "RB.*" "JJ.*"
[lemma="element|part|component|constituent|piece|portion|section|fragment"] [word="of"]
[tag!="V.*"]{0,5} 1:"N.*" [tag!="V.*"]{0,5} [lemma="be"] [tag!="V.*"]{0,7} 2:"N.*"

#10 (that) part of the WHOLE is called PART

("DT"|"CD"|[word="some|several|any|various|distinct|different"]) "RB.*" "JJ.*"
[lemma="element|part|component|constituent|piece|portion|section|fragment|segment"]
[word="of"] [tag!="V.*"]{0,5} 1:"N.*" [tag!="V.*"]* [lemma="be"] "RB.*"
[word="called|termed|known|named|referred"] [word="to"]? [word="as"]?
([tag="DT|RB.*|JJ.*|N.*"]|[word="or",|\(|\)])* 2:"N.*"

#11 PART, (a) component of WHOLE

2:"N.*" ",|\("? "DT"? "RB.*" "JJ.*"
[lemma="element|part|component|constituent|piece|portion|section|fragment|content|segment"]
[word="of"] ([tag="DT|RB.*|JJ.*|N.*"]|[word=",|and|or"])* 1:"N.*"

#12 WHOLE (which) is divided into x parts: PART

```
1:"N.*" [tag!="V.*"]{0,5} ([tag="IN/that|WDT"] [tag="V.*"])? [tag!="V.*"]{0,5} [lemma="be"]
"RB.*" [word="divided"] [word="into|in"] "CD|DT"? "RB.*" "JJ.*"
[lemma="element|part|component|constituent|piece|portion|section|fragment|content|segment"] ",|\"? ([tag=":" ] [word="such"] [word="as"] |
[word="especially|primarily|namely|usually|typically|characteristically|generally|mainly"])
[tag!="V.*"]* 2:"N.*"
```

#13 WHOLE is divided into x PART

```
1:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"] ",|\"? [tag="IN/that|WDT"]? [lemma="be",|\" ]
"RB.*" [word="divided"] [word="in|into"] [tag!="V.*|IN" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"]* 2:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtype|subfamily|subgroup|subclass|subcategory|subspecies"]
```