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# 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 Kilgarriff]
# - 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 Kilgarriff] # - 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_possesor 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 relations and semantic items
2018
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(`SCICOMGEN',
`[scientific_name="NCOM|SCI1|SCI2|SCI1SCI1|SCI2SCI1|NGENCOLL|NGENPRT"]')
define(`SNTI', `[scientific_name="TI"]')
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"
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="%w" and/or ...
*UNIMAP and/or *SYMMETRIC
1:SCICOMGEN [word=","]{0,1} [word="and"|word="or"|word=","]
DETERMINER{0,1} "CD"{0,2} MODIFIER{0,3} NOUN{0,2} 2:SCICOMGEN 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
=objects of "%w"/verbs with "%w" as object
*UNIMAP object/object_of
1:VERB ADVERB{0,2} DETERMINER{0,1} "CD"{0,2} MODIFIER{0,3} NOUN{0,2}
2:SCICOMGEN NOT_NOUN
2:SCICOMGEN ADVERB{0,2} 1:"V.N"
2:SCICOMGEN WHO_WHICH_THAT? ADVERB{0,5} VERB_BE ADVERB{0,2} 1:"V.N"

*DUAL
=subjects of "%w"/verbs with "%w" as subject
*UNIMAP subject/subject_of
2:SCICOMGEN WHO_WHICH_THAT? ADVERB{0,3} VERB_BE? ADVERB{0,2} 1:"V.[^N]?"
2:SCICOMGEN WHO_WHICH_THAT? ADVERB{0,3} VERB_BE? ADVERB{0,2} VERB_HAVE
ADVERB{0,2} 1:"V.N"
1:"V.N" ADVERB{0,2} [word="by"] DETERMINER{0,1} "CD"{0,2} MODIFIER{0,3}
NOUN{0,2} 2:SCICOMGEN NOT_NOUN

*DUAL
="%w" is a .../... is a "%w"
*UNIMAP predicate_of/predicate
1:SCICOMGEN WHO_WHICH_THAT? ADVERB{0,5} VERB_BE ADVERB{0,2}
DETERMINER{0,1} "CD"{0,2} MODIFIER{0,3} NOUN{0,2} 2:SCICOMGEN NOT_NOUN

*DUAL
=modifiers of "%w"/nouns modified by "%w"
*UNIMAP modifier/n_modifies
2:SCICOMGEN MODIFIER{0,3} NOUN{0,2} 1:SCICOMGEN 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:SCICOMGEN [tag!="V.*"]{0,7} [lemma="be|,|:|belong|\("]
[tag!="V.*"]{0,7}
[lemma="type|kind|example|group|class|sort|category|family|species|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"]
[tag!="V.*"]{0,7} 1:SCICOMGEN
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#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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"]
[tag!="V.*|IN"]{0,5} 1:SCICOMGEN []{0,3} [lemma="include|be"]
[tag!="V.*|IN.*"]{0,7} 2:SCICOMGEN

#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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"]
[tag!="V.*|IN"]{0,5} 1:SCICOMGEN []{0,3} [lemma="range"] [word="from"]
[(tag!="V.*|IN.*|CD")|word="to"]{0,7} 2:SCICOMGEN

#4 HYPER types?, ranging from HYPO to HYPO

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

#5 HYPER types include HYPO

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

#6 HYPER such as HYPO

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

#7 HYPER including HYPO

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

#8 HYPER, especially HYPO

1:SCICOMGEN [word=",|\("]
[word="especially|primarily|namely|usually|typically|characteristically|g
enerally|mainly"] [tag!="V.*|IN"]* 2:SCICOMGEN

#9 HYPO and other HYPER

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

#10 HYPO is defined/classified as HYPER
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2:SCICOMGEN [tag!="V.*"]{0,5} "MD"? [lemma="be|,|\("] [word!="not"]?
[word="defined|classified|categori.ed|regarded"] [word="as"]
"DT.*|RB.*|JJ.*"*
([lemma="type|kind|example|group|class|sort|category|family|species|subty
pe|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"])?
[tag!="V.*"]{0,2} 1:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtyp
e|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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"])?
[tag!="V.*"]* 2:SCICOMGEN [word="as"] [tag!="V.*|IN"]* 1:SCICOMGEN

#12 HYPER classified in (x types of) HYPO

1:SCICOMGEN ",|\("? [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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"]? [tag!="V.*"]*
2:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"]

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

1:SCICOMGEN ",|\("? [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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"] [tag!="V.*"]*
2:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtyp
e|subfamily|subgroup|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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"] [word="of"]
1:SCICOMGEN ",|\("? [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:SCICOMGEN
[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|subtyp
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e|subfamily|subgroup|subclass|subcategory|subspecies"]? [word="of"]?
[tag!="V.*"]{0,2} 1:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"]

#17 HYPO refers to HYPER

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


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

#1 WHOLE composed of PART

1:SCICOMGEN [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:SCICOMGEN

#2 WHOLE comprises PART

1:SCICOMGEN
[lemma="type|kind|example|group|class|sort|category|family|species|subtyp
e|subfamily|subgroup|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|concentrati
on|volume|load|amount|mixture|composition|level"]

#3 PART composes WHOLE

2:SCICOMGEN [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|concentrati
on|volume|load|amount|mixture|composition|level|threat"]

#4 PART is/constitutes part/element of WHOLE

2:SCICOMGEN [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
```

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|percentage|section|segment|fragment|content|volume|load|mixture|composit
ion|level|proportion|threat"] [word="of"] [tag!="V.*"]{0,7} 1:SCICOMGEN

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

1:SCICOMGEN [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|g
enerally|mainly"]) [tag!="V.*"]{0,7} 2:"N.*"

#6 WHOLE has/includes a x fraction of PART

1:SCICOMGEN [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|conce
ntration|volume|load|mixture|composition|proportion"] [word="of"]
[tag!="V.*"]{0,5} 2:[tag="N.*" &
lemma!="fraction|percentage|percent|portion|amount|fragment|content|conce
ntration|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|g
enerally|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
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|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|g
enerally|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|subtyp
e|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|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"]* 2:[tag="N.*" &
lemma!="type|kind|example|group|class|sort|category|family|species|subtyp
e|subfamily|subgroup|subclass|subcategory|subspecies"]
```