THE GRAMMATICAL RELATIONS
(SYNTACTIC DEPENDENCIES)

Table of contents

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0. Preface

This document describes the grammatical relations and their semantic and morpho-syntactic features appearing in the treebank TUT. The syntactic structure of the sentence is represented as a dependency tree where each node represents a single word and each edge represent a syntactic relation between a head word and a dependent word (non-terminal nodes are not allowed).

Since the grammatical relations can include three kinds of information, they can be seen as feature structures where there are an obligatory information (the name of a functional syntactic relation) and two optional features (morpho-syntactic and semantic). The name of each relation can be read on the basis of the following syntax:

Morphfeat - Frel - Semfeat

where **Morphfeat** is a morpho-syntactic feature (optional), **Frel** is a functional syntactic relation (obligatory), **Semfeat** is a semantic feature (optional) and hyphens (-) are hyphens. Each feature and relation can be simple (including a primary name only) or composed by two or more labels separated by **+** (one primary name and one or more secondary names). Since this annotation system can be applied at different degrees of specification, we will show examples annotated only with Frel (section 1) or with Frel and both Morphfeat and Semfeat (section 3).

In the first section we describe the functional syntactic relations, in the second we present the list of morpho-syntactic features and finally, in the third, we will show the semantic features.

In the following examples "$_H$" indicates the head of the described relation, whilst "$_D$" indicates the dependent. In order to represent the Italian syntactic form, the English translations are 'literal' and sometimes not correct English expressions.

1. List of functional syntactic relations

The functional syntactic relations are grammatical relations or syntactic roles well known in literature. They are hierarchically organized so that each relation inherits all the definitional properties of their ancestors (criteria used to distinguish different relations are indicated below). In the following hierarchically organized list we put both the primary and the secondary names (this latter preceded by "+") which can be added to some relation in order to further specify it.

Italian Treebank: TUT (Treebank dell'Università di Torino)


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    1. DEPENDENT
        2. FUNCTION
            3. ARG
                4. SUBJ
                    +IMPERS
                5. OBJ
                6. INDCOMPL
                7. INDOBJ
                8. PREDCOMPL
                    + SUBJ
                    + OBJ
                9. EXTRAOBJ
            10.MODIFIER
                11. RMOD
                    + RELCL(+REDUC)
                    12. RMODPRED
                            + SUBJ
                            + OBJ
                13. APPOSITION
        14. NOFUNCTION
            15. AUX
                + PASSIVE
                + PROGRESSIVE
                + TENSE
            16. COORDINATOR
                17. COORD
                    + ADVERS
                    + BASE
                    + CORRELAT
                    + COMPAR
                    + COND
                    + ESPLIC
                    + RANGE
                    + SYMMETRIC
                18. COORD2ND
                    + ADVERS
                    + BASE
                    + CORRELAT
                    + COMPAR
                    + COND
                    + ESPLIC
                    + RANGE
                    + SYMMETRIC
                19. COORDANTEC
                    + CORRELAT
                    + COMPAR
            20. CONTIN
                + LOCUT
                + DENOM
                +PREP
            21. EMTYCOMPL
            22. INTERJECTION
            23. SEPARATOR
                24. END
                25. OPEN
                    + PARENTHETICAL
                    + QUOTES
                26. CLOSE
                    + PARENTHETICAL
                    + QUOTES
            27. VISITOR
                + ROBJ


1.    DEPENDENT:
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the most generic syntactic relation between a head and a dependent, the root of the grammatical relation hierarchy.

2.   FUNCTION:
kind of DEPENDENT corresponding to some semantic relation existing between the interpretations of the same head and dependent. All the relations which are subclass of FUNCTION can be extended with morpho-syntactic and semantic features (see section 3 for examples of relations with features).

3.   ARG:
kind of FUNCTION corresponding to some semantic relation licensed by the head lexical structure, with maximum and minimum number of occurrences fixed by the head, subcategorized in some way by the head. Examples: "[l']$_H$uomo [camminava]$_D$ " - "[the]$_H$ man [walked]$_D$ ", "Mary mangiò il dolce [con]$_H$ [la]$_D$ crema " - "Mary ate the cake [with]$_H$ [cream]$_D$".

4.   SUBJ:
kind of direct ARG called first argument, occurring at least and most once, expressing the subcategorization of the subject. Examples: "[Mary]$_D$ [mangiò]$_H$ la mela" - "[Mary]$_D$ [ate]$_H$ the apple", "[Io]$_D$ [bevo]$_H$ birra" - "[I]$_D$ [drink]$_H$ beer".

5.   OBJ:
kind of direct ARG occurring at least and most once, expressing the subcategorization of the object. Examples: "Mary [mangiò]$_H$ [la]$_D$ mela " - "Mary [ate]$_H$ [the]$_D$ apple ", "Io [bevo]$_H$ [birra]$_D$" - "I [drink]$_H$ [beer]$_D$".

6.   INDOBJ:
kind of indirect ARG occurring at least and most once, expressing the subcategorization of the indirect object. Examples: "Mary [da]$_H$ il libro [a George]$_D$" - "Mary [give]$_H$ the book [to George]$_D$" (="Mary [give]$_H$ [George]$_D$ the book", in Italian dative shift does not exist).

7.   INDCOMPL:
kind of indirect ARG occurring a variable number of times and expressing the subcategorization of various kinds of indirect complements. Examples: "Mary fu [uccisa]$_H$ [da]$_D$ lui " - "Mary was [killed]$_H$ [by]$_D$ him ", "Io sto [andando]$_H$ [a]$_D$l negozio " - "I am [going]$_H$ [to]$_D$ the store ".

8.   PREDCOMPL +SUBJ +OBJ:
kind of ARG with predicative role concerning a dependent of the head, occurring at least and most once, expressing the subcategorization of the predicative complement; with +SUBJ it indicates that its predication refers to the subject of its head; with +OBJ it indicates that its predication refers to the object of its head. Examples: +SUBJ in "Mary [è]$_H$ [carina]$_D$" - "Mary [is]$_H$ [pretty]$_D$", +OBJ in "Mary [vide]$_H$ John [felice]$_D$" - "Mary [saw]$_H$ John [glad]$_D$".

9.   EXTRAOBJ:
kind of ARG with the role of doubling the object, occurring at least and most once. Examples: "[Un]$_D$ aquilone lo [vide]$_H$ John" - "[One]$_D$ kite John [saw]$_H$ it".

10.MODIFIER:
kind of FUNCTION corresponding to some semantic relation licensed by the dependent but not subcategorized by it (not obligatory), without a fixed maximum and minimum number of occurrences. Examples: "Mary mangiò il [dolce]$_H$ [con]$_D$ la crema " - "Mary ate the [cake]$_H$ [with]$_D$ cream", "John [arrivò]$_H$ [in]$_D$ ritardo " - "John [came]$_H$ [late]$_D$".

11.RMOD +RELCL(+REDUC):
kind of MODIFIER restricting the meaning of the head; with RELCL in introduces a restricting relative clause, which can be reduced (without an introductory pronoun and with a non-finite verb) and marked by REDUC. Examples: "Lui [arriverà]$_H$ [tardi]$_D$" - "He [will arrive]$_H$ [late]$_D$", +RELCL in "L'[uomo]$_H$ che [arriverà]$_D$ tardi è mio zio" - "The [man]$_H$ (that) [will arrive]$_D$ late is my

uncle", +RELCL+REDUC "L'[uomo]$_H$ [arrivato]$_D$ tardi è mio zio" - "The [man]$_H$ [arrived]$_D$ late is my uncle".

12.RMODPRED +SUBJ +OBJ:
kind of RMOD playing the role of (non-argumental) predicative of the head, with +SUBJ it indicates that its predication refers to the subject of its head; with +OBJ it indicates that its predication refers to the object of its head. Examples: "Si [vide]$_H$ [costretto]$_D$ a correre" - "(He) did [saw]$_H$ himself [forced]$_D$ to run", +SUBJ in "[Tornò]$_H$ a casa [spaventato]$_D$" - "(He) [came back]$_H$ to home [scared]$_D$", +OBJ in "Lo avevano [visto]$_H$ [nascosto]$_D$" - "(They) [saw]$_H$ him [hidden]$_D$".

13.APPOSITION:
kind of MODIFIER not restricting the meaning of the head. Examples: "Questo è [John]$_H$, [presidente della compagnia]$_D$" - "This is [John]$_H$, [president]$_D$ of the company ".

14.NOFUNCTION:
kind of DEPENDENT not corresponding to any semantic relation between the interpretations of the same head and dependent (relations with atypical behaviour).

15.AUX +PASSIVE +PROGRESSIVE +TENSE:
kind of NOFUNCTION with auxiliary role of verb, with +PASSIVE in passive constructions, with +PROGRESSIVE and +TENSE in progressive and active constructions respectively. Examples: +PASSIVE in "Mary [fu]$_D$ [uccisa]$_H$ da lui" - "Mary [was]$_D$ [killed]$_H$ by him"; +PROGRESSIVE in "Io [sto]$_D$ [andando]$_H$ al negozio" - "I [am]$_D$ [going]$_H$ to the store"; +TENSE in "Io [ho]$_D$ [rotto]$_H$ la finestra" - "I [have]$_D$ [broken]$_H$ the window".

16.COORDINATOR:
kind of NOFUNCTION occurring in coordinations (a coordination is a syntactic structure including at least two conjuncts, a conjunction and two occurrences of COORDINATOR linking them).

17.COORD +BASE +ADVERS +COMPAR +COND +CORRELAT +ESPLIC+RANGE+SYMMETRIC:
kind of COORDINATOR linking the first conjunct with the conjunction in a coordination; with +BASE when COORD is in a conjunctive or disjunctive coordination (introduced by "e" – "and", "o" – "or", or comma); with +ADVERS when COORD is in adversative coordination (an adversative coordination is a syntactic non-reversible coordination with at most two conjuncts); with +COMPAR when COORD is in comparative coordination (the comparative coordination is a coordination where the conjunction is comparative and has an antecedent comparative conjunction); with +COND when the coordination describes a sort of condition (introduced by "se" – "if"); with +CORRELAT when COORD is in a correlative coordination (the correlative coordination is a coordination where the conjunction is correlative and has an antecedent correlative conjunction); with +ESPLIC when COORD links the first conjunct with an explicative conjunction. Examples: +BASE "[Io]$_H$ [e]$_D$ Mary" - "[I]$_H$ [and]$_D$ Mary", "[Tu]$_H$ [,]$_D$ [John]$_H$ [e]$_D$ lei" - "[You]$_H$ [,]$_D$ [John]$_H$ [and]$_D$ her", +ADVERS in "Lei è [carina]$_H$ [ma]$_D$ stupida" - "She is [pretty]$_H$ [but]$_D$ stupid", +COMPAR in "Mary è più [carina]$_H$ [che]$_D$ stupida" - "Mary is more [pretty]$_H$ [than]$_D$ stupid", , +COND in "Mary è [se]$_H$ non bella [simpatica]$_D$" - "Mary is [if]$_H$ not beautiful [nice]$_D$", +CORRELAT in "Mary non è nè [carina]$_H$ [nè]$_D$ stupida" - "Mary is neither [pretty]$_H$ [nor]$_D$ stupid", +ESPLIC in "[il mio gatto]$_H$, [cioè]$_D$ quello nero, non mangia pesce" - "[my cat]$_H$, [namely]$_D$ the black one, doesn't eat fish", +RANGE in "strade tra [Tirana]$_H$ [e]$_D$ il porto" - "roads between [Tirana]$_H$ [and]$_D$ the harbour", +SYMMETRIC in "la rottura clamorosa tra [Hoxha]$_H$ [e]$_D$ Kruscev" - "the clamorous breaking off between [Hoxha]$_H$ [and]$_D$ Kruscev".

18.COORD2ND +BASE +ADVERS +COMPAR +COND +CORRELAT +ESPLIC:
kind of COORDINATOR linking the conjunction with the second conjunct in a coordination; with +BASE when COORD is in a conjunctive or disjunctive coordination (introduced by "e" – "and", "o" – "or", or comma); with +ADVERS

when COORD2ND is in adversative coordination; with +COMPAR when COORD2ND is in comparative coordination; +COND when the coordination describes a sort of condition (introduced by "se" – "if"); with +CORRELAT when COORD is in a correlative coordination; with +ESPLIC when COORD2ND links an explicative conjunction with the second conjunct. Examples: "Io [e]$_H$ [Mary]$_D$" - "I [and]$_H$ [Mary]$_D$", "Tu [,]$_H$ [John]$_D$ [e]$_H$ [lei]$_D$" - "You [,]$_H$ [John]$_D$ [and]$_H$ [her]$_D$", +ADVERS in "Lei è carina [ma]$_H$ [stupida]$_D$" - "She is pretty [but]$_H$ [stupid]$_D$", +COMPAR in "Mary è più carina [che]$_H$ [stupida]$_D$" - "Mary is more pretty [than]$_H$ [stupid]$_D$", +COND in "Mary è [se]$_H$ non [bella]$_D$ simpatica" - "Mary is [if]$_H$ not [beautiful]$_D$ nice", +CORRELAT in "Mary non è nè carina [nè]$_H$ [stupida]$_D$" - "Mary is neither pretty [nor]$_H$ [stupid]$_D$", +ESPLIC in "il mio gatto, [cioè]$_H$ [quello]$_D$ nero, non mangia pesce" - "my cat, [namely]$_H$ [the]$_D$ black one, doesn't eat fish", +RANGE in "strade tra Tirana [e]$_H$ [il porto]$_D$ " - "roads between Tirana [and]$_H$ [the harbour]$_D$" , +SYMMETRIC "la rottura clamorosa tra Hoxha [e]$_H$ [Kruscev]$_D$" - "the clamorous breaking off between [Hoxha [and]$_H$ [Kruscev]$_D$".

19.COORDANTEC +CORRELAT +COMPAR:
kind of COORDINATOR linking the antecedent conjunction with the first conjunct in a coordination; with +CORRELAT when COORDANTEC is in correlative coordinations; with +COMPAR when COORDANTEC is in comparative coordinations. Examples: +CORRELAT in "Mary non è [nè]$_D$ [carina]$_H$ nè stupida" - "Mary is [neither]$_D$ [pretty]$_H$ nor stupid", +COMPAR in "Mary è [più]$_D$ [carina]$_H$ che stupida" - "Mary is [more]$_D$ [pretty]$_H$ than stupid".

20.CONTIN +LOCUT +DENOM +PREP:
kind of NOFUNCTION with the role of introducing a part of an expression non-compositionally interpretable; with +LOCUT it links two parts of a locutive or idiomatic expression[1]; with DENOM it links two parts of a denominative structure. Examples: "[200]$_H$ [mila]$_D$" - "[200]$_H$ [thousands]$_D$", +LOCUT in "[punto]$_H$ [di]$_{D,H}$ [vista]$_D$" - "[point]$_H$ [of]$_{D,H}$ [view]$_D$", +DENOM in "[Gerard]$_H$ [Depardieu]$_D$", "Arrivò [prima]$_H$ [de]$_D$ll'alba" – "(She/he) arrived [ahead]$_H$ [of]$_D$ the daybreack".

21.EMPTYCOMPL:
kind of NOFUNCTION linking a reflexive personal pronoun with a verbal head, instantiated with particular Italian verbs only in order to mark their transitivity or reflexivity. Examples: "La porta [si]$_D$ [apre]$_H$" - "The door [opens]$_H$".

22.INTERJECTION:
kind of NOFUNCTION linking a head with an interjective expression. Examples: "[Ahimè]$_D$ ho [rotto]$_H$ la finestra" - "[Alas]$_D$ (I) have [brocken]$_H$ the window".

23.SEPARATOR:
kind of NOFUNCTION playing the role of separator of parts of the sentence. Examples: "[Prego]$_H$[,]$_D$ entra!" - "[Please]$_H$[,]$_D$ come in!".

24.END:
kind of SEPARATOR linking the head of the whole sentence with the punctuation marker closing the sentence. Examples: "Sei [andato]$_H$ al mare [?]$_D$" - "Did you [go]$_H$ to the sea [?]$_D$".

25.OPEN +PARENTHETICAL +QUOTES:
kind of SEPARATOR linking the head of a structure closed between two punctuation markers with the punctuation marker opening it; with +PARENTHETICAL OPEN plays the role of opening a parenthetical construction (between brackets or commas); with +QUOTES OPEN indicates the beginning of an expression between quotation marks. Examples: +PARENTHETICAL in "il mio gatto[,]$_D$ cioè quello nero, non [mangia]$_H$ pesce" - "my cat[,]$_D$ namely the black one, doesn't [eat]$_H$ fish", +QUOTES in "Il mio gatto ["]$_D$[Micky]$_H$" è nero" - "My cat ["]$_D$[Micky]$_H$" is black".

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[1] In TUT we annotate two kinds of locutions, fixed and flexible; the relation CONTIN+LOCUT is used in the annotation of the fixed locutions whilst the label *LOCUT can be added to any other functional syntactic relation in order to annotate a flexible locution (see Linguistic notes for more details about locutions))

26.CLOSE +PARENTHETICAL +QUOTES:
kind of SEPARATOR linking the head of a structure closed between two punctuation markers with the punctuation marker closing it; with +PARENTHETICAL CLOSE plays the role of closing a parenthetical construction (between brackets or commas); with +QUOTES CLOSE indicates the end of an expression between quotation marks. Examples: +PARENTHETICAL in "il mio gatto, cioè quello nero[,]$_D$ non [mangia]$_H$ pesce" - "my cat, namely the black one[,]$_D$ doesn't [eat]$_H$ fish", +QUOTES in "Il mio gatto "[Micky]$_H$["]$_D$ è nero" - "My cat "[Micky]$_H$["]$_D$ is black".

27.VISITOR +ROBJ:
kind of NOFUNCTION playing the role of extracting part of a structure; with +ROBJ it indicates an object raising extraction. Examples: "[Così]$_D$ devi [vedere]$_H$ questo argomento" - "[This way]$_D$ you must [see]$_H$ this topic", +ROBJ in "Non [si]$_D$ poteva [recare]$_H$ all'estero" – literally: "Not [himself]$_D$ could [go]$_H$ in foreign countries".

2. List of morpho-syntactic features

This kind of features indicate morpho-syntactic behaviours of the relation and mark the differences between structures where different morphological categories are involved. In particular they are useful in marking different morpho-syntactic variants of a same predicative structure, for instance, the fact that the head of a relation SUBJ is a NOUN instead of a VERB, which have several consequences on the syntactic structure: the various complements will be introduced all by prepositions, the relative order of complements and the head will be different.
Since in ARG relations is usually the head which determines the syntactic structure, while in MODIFIER relations is the dependent, we annotate in ARGs the morpho-syntactic feature coming from the head, and in MODIFIERs the morpho-syntactic feature coming from the dependent (see section 3 for the examples). As for the functional syntactic relations, the names of morpho-syntactic features can include secondary names.

1. ADJC: +COMPAR,+DEITT,+ORDIN,+POSS,+QUALIF(+SUPERLREL),+QUANTIF,+STRENG
2. ADVB: +ADVERS, +COMPAR, CONCESS, +INTERR, +QUANTIF
3. CONJ
4. DATE
5. DET: +DEF, +INDEF, INTERR, +QUANTIF
6. NOUN
7. NUM: +CARDIN
8. PDET: +QUANTIF
9. PREP: +COND, +SUPERLREL
10. PRON
11. VERB: +CAUS,+MODAL,+FIN,+INF,+CONCESS+COMPAR,+COND,+CONSEQ,+CORRELAT

3. List of semantic features

The semantic features are relations holding between the interpretations of the same head and dependent of the functional syntactic relation and belonging to the semantic or pragmatic conceptual area. Only semantic relations isomorphic to the syntactic ones are taken into account and annotated with the corresponding FUNCTION relations, in fact the semantic features represent a sort of interface between semantics and syntax. In the list we put also the secondary names (preceded by "+") which can be added to some semantic relation in order to further specify it (its primary name). In the following examples we show the functional syntactic label and both its features (morpho-syntactic and semantic).

1.   ACTGOAL
It indicates the goal of the action described by the head.
Examples: PREP-RMOD-ACTGOAL: "Non [ho]$_H$ nulla [da]$_D$ fare" – "(I) [have]$_H$ nothing [to]$_D$ do"

2.ADDRESSEE: +AGAINST, +BENEFICIARY
It represents the addressee of the action described by the head, +AGAINST if the action is against him/her, +BENEFICIARY if the action is in favour of him/her.
Examples: PREP-RMOD-ADDRESSEE: "Il migliore [parser]$_H$ [per]$_D$ grammatiche context-free" "The best [parser]$_H$ [for]$_D$ context-free grammars"; PREP-RMOD-ADDRESSEE+AGAINST: "[Processi]$_H$ [contro]$_D$ politici" – "[Civil trials]$_H$ [against]$_D$ politicians"; PREP-RMOD-ADDRESSEE+BENEFICIARY: "Mary [lavora]$_H$ [per]$_D$ John" – "Mary [lavora]$_H$ [per]$_D$ John"

3.AGE
It indicates the age of the head.
Examples: PREP-RMOD-AGE: "[Uomini]$_H$ [su]$_D$i trent'anni" – "[Men]$_H$ [around]$_D$ thirty years (old)"

4.AGENT
It describes the agent of the action described by the head.
Examples: NOUN-INDCOMPL-AGENT: "La [vittoria]$_H$ [di]$_D$ Napoleone alle Piramidi" – "The [victory]$_H$ [of]$_D$ Napoleon at Pyramids"; VERB-SUBJ/INDCOMPL-AGENT: "Le sinfonie [registrate]$_H$ [da]$_D$ Toscanini" – "The symphonies [recorded]$_H$ [by]$_D$ Toscanini"

5.AGTOBJ
In represents the object of which the head is agent.
Examples: PREP-RMOD-AGTOBJ: "[cantori]$_H$ [di]$_D$ samba" – "[singers]$_H$ [of]$_D$ samba"

6.AHEAD
It indicates the thing in sight of which the head is done.
Examples: PREP-RMOD-AHEAD: "[In]$_D$ vista del Natale, ho [comprato]$_H$ un regalo per John" – "[In]$_D$ sight of Christmas, (I) have [bought]$_H$ a present for John"

7.AUTHOR
It describes the author of the head.
Examples: PREP-RMOD-AUTHOR: "Un [libro]$_H$ [di]$_D$ Gabriel Garcia Marquez" – "A [book]$_H$ of]$_D$ Gabriel Garcia Marquez"

8.CARRY
It represents what the head is carrying.
Examples: PREP-RMOD-CARRY: "Mary [arrivò]$_H$ [con]$_D$ due valige" – "Mary [arrived]$_H$ [with]$_D$ two suitcases"

9.COMPANY
It described with who the head is.
Examples: PREP-RMOD-COMPANY: "Vuole [stare]$_H$ [con]$_D$ lui" – "(She/he) want to [stay]$_H$ [with]$_D$ him"

10.COMPARATIVE
It introduces a comparison with the head.
Examples: PREP-RMOD-COMPARATIVE: "[Rispetto]$_D$ al passato sono stati [fatti]$_H$ passi avanti" – "[In comparison]$_D$ with the past has been [taken]$_H$ steps forward"

11.COMPOSEDOF
It represents the kinds of elements which compose the head.
Examples: PREP-RMOD-COMPOSEDOF: "una [catasta]$_H$ [di]$_D$ legna" – "a [stack]$_H$ [of]$_D$ wood"

12.CONJTEXT
It represents something referring to the context and referring to the head.

Examples: ADVB-RMOD-CONJTEXT: "I Sudisti [credevano]$_H$ [infatti]$_D$ nella propaganda abolizionista" - "The Confederates [believed]$_H$ [in fact]$_D$ in the abolitionist propaganda"

13.CONTAINS
It represents the content of the head.
Examples: PREP-RMOD-CONTAINS: "[scaffali]$_H$ [di]$_D$ libri" - "[shelves]$_H$ [of]$_D$ books"

14.CONTRAST
It indicates something contrasting with the head.
Examples: ADVB-RMOD-CONTRAST: "[Nonostante]$_D$ la riforma fiscale la crisi [continuava]$_H$" - "[In spite of]$_D$ the taxation reform the crisis [continued]$_H$"

15.DATIVE
It represents the receiver (in some form) of the action described by the head.
Examples: NOUN-INCOMPL-DATIVE: "l' [opposizione]$_H$ [a]$_D$l governo" - "the [opposition]$_H$ [to]$_D$ the government"

16.DAY
It represents the number of a day (of the week) which is the head.
Examples: NUM-RMOD-DAY: "venerdì [27] ottobre" - "[Friday]$_H$ [27]$_D$ October".

17.DENOM
It is a denomination of the head.
Examples: NOUN-APPOSITION-DENOM: "La [compagnia]$_H$ [Silva]$_D$ ha raccolto i soldi per il finanziamento" - "The [company]$_H$ [Silva]$_D$ collected the money for financing"

18.DESCR
It indicates a descripion of the head.
Examples: PREP-RMOD-DESCR: "La [condizione]$_H$ [di]$_D$ proiettività è rispettata nella maggior parte delle strutture" - "The [constrain]$_H$ of]$_D$ projectivity is respected in the most of the structures"

19.DISTRIB
It describes among who/what the head is distributed.
Examples: PREP-RMOD-DISTRIB: "[Alcuni]$_H$ [tra]$_D$ i più vecchi edifici" - "[Some]$_H$ [of]$_D$ the more ancient buildings"

20.DOUBT
It indicates the doubting aspect of the head.
Examples: ADVB-RMOD-DOUBT: "Ma [forse]$_D$ non [è]$_H$ così" - "But [perhaps]$_D$ (it) [is]$_H$ not that way"

21.EVAL
It indicates an evaluation of the head.
Examples: PREP-RMOD-EVAL: "Una [attività]$_H$ imprenditoriale [di]$_D$ alto livello" – "A company [activity]$_H$ [of]$_D$ high level"

22.EVENT
It describes the event where the head happens.
Examples: PREP-RMOD-EVENT: "[A]$_D$lla conferenza [parlò]$_H$ raramente" - "[At]$_D$ the conference (she/he) [talked]$_H$ seldom"

23.GOAL
It describes the goal of the head.
Examples: VERB-INDCOMPL-GOAL: "Il metodo [serve]$_H$ [per]$_D$ parsificare" – "The method [serves]$_H$ [in]$_D$ parsing"

24.INCHARGE
It indicates of what the head is incharged.
Examples: PREP-RMOD-INCHARGE: "Il [ministero]$_H$" [de]$_D$l turismo" - "The [Ministry]$_H$" [of]$_D$ Tourism"

25.LIMIT
It indicates some limit or lacking of the head.
Examples: ADVB-RMOD-LIMIT: "John ha comprato un [appartamento]$_H$ [parzialmente]$_D$ ristrutturato" - "John bought a [flat]$_H$ [partially]$_D$ renovated"

26.LISTPOS
It represents the position of the head within a list of items.
Examples: NUM-RMOD-LISTPOS: "[832]$_D$. [Caccia]$_H$ e pesca" - [832]$_D$. [Hunting]$_H$ and fishing"

27.LOC: +APPROX, +BEHIND, +BEYOND, +FROM, +IN, +METAPH, +ON, +ORIGIN, +TO, +UNDER, +WHOLEOBJ
It represents the location of the head in its various forms.
Examples: PREP-RMOD-LOC+APPROX: "[Abita]$_H$ [vicino]$_D$ a San Pietro" - "(She/he) [lives]$_H$ [close]$_D$ to San Pietro"; PREP-RMOD-LOC+BEHIND: "[Rimase]$_H$ [dietro]$_D$ a un cespuglio" - "(She/he) [Remained]$_H$ [behind]$_D$ a bush"; PREP-RMOD-BEYOND: "Lo [vide]$_H$ [oltre]$_D$ la prua della nave" - "(She/he) [saw]$_H$ him [beyond]$_D$ the stem of the ship"; PREP-RMOD-FROM: "John [uscì]$_H$ [da]$_D$lla casa" - "John [went out]$_H$ [from]$_D$ the house"; VERB-INDCOMPL-LOC+IN: "[Starà]$_H$ [a]$_D$ San Francisco per dieci minuti" - "(She/he) [will stay]$_H$ [in]$_D$ San Francisco for ten minutes"; PREP-RMOD-LOC+ON: "L'allenatore [siederà]$_H$ [su]$_D$lla panchina" - "The coach [will sit]$_H$ [on]$_D$ the bench"; PREP-RMOD-LOC+ORIGIN: "Uno [studente]$_H$ [di]$_D$ Ancona è scomparso lo scorso settembre" - "A [student]$_H$ [of]$_D$ Ancona is missing the last September"; VERB-COMPL-LOC+TO: "Mio padre mi [portò]$_H$ [a]$_D$l cinema" - "My father [took]$_H$ me [to]$_D$ the cinema"; "John era [nascosto]$_H$ [sotto]$_D$ il letto" - "John was [hidden]$_H$ [under]$_D$ the bed"; PREP-RMOD-LOC-WHOLEOBJ: "Le strade del [Nord]$_H$ [de]$_D$l paese" - "The roads of the [North]$_H$ [of]$_D$ the country"

28.MAKER
It indicates the maker of the (material) head.
Examples: PREP-RMOD-MAKER: "I [cioccolatini]$_H$ [di]$_D$ Godiva" - "The [chocolates]$_H$ [by]$_D$ Godiva"

29.MATERIAL
It describes the material with which the head is made.
Examples: PREP-RMOD-MATERIAL: "Una [fibbia]$_H$ [d']$_D$ argento di mezza libbra" – "A [buckle]$_H$ [of]$_D$ silver of (one) half pound"

30.MEANSMANNER
It represents the instrument or manner used in order to make the head.
Examples: VERB+INF-RMOD-MEANSMANNER: "[Usando]$_D$ questo metodo [otterrai]$_H$ risultati più interessanti" - "[Using]$_D$ this method (you) [will obtain]$_H$ more interesting results"

31.MEASORIGIN
It indicates from where (in the time or in the space) it begins the .
Examples: PREP-RMOD-MEASORIGIN: "Accadde dopo [una]$_H$ settimana [da]$_D$l crollo dei prezzi" – "(It) happens after [a]$_H$ week [from]$_D$ the slump in prices"

32.MEASUREDBY
It indicates the fact that the dependent is measured by the unit of measurement described by the head.
Examples: PREP-RMOD-MEASUREDBY: "Un [bicchiere]$_H$ [di]$_D$ bianco" – "A [glass]$_H$ [of]$_D$ white (wine)"

33.MONTH
It represents the MONTH of a day which is the head.
Examples: NOUN-RMOD-MONTH: "giovedì [28]$_H$ [ottobre]$_D$" - "thursday [28]$_H$ [october]$_D$"

34.NEG
Negation of the head.
Examples: ADVB-RMOD-NEG: "Io [non]$_D$ [mangio]$_H$ pesce" - "I do [not]$_D$ [eat]$_H$ fish"

35.ORGANIZATION
It indicates the organization to which the head belongs.
Examples: PREP-RMOD-ORGANIZATION: "Sono [professori]$_H$ [di]$_D$ quella università" -
"(They) are [teachers]$_H$ [of]$_D$ that university"

36.OWNER
It describes the owner of the head.
Examples: PREP-RMOD-OWNER: "I [libri]$_H$ preziosi [de]$_D$lla biblioteca" - "The
valuable [books]$_H$ [of]$_D$ the library"

37.PARTOF
Indicates a part of the head.
Examples: PREP-RMOD-PARTOF: "Una [villa]$_H$ [con]$_D$ giardino" - "A [villa]$_H$ [with]$_D$
garden"

38.PARTICIPANT
It represents who participates to the event described by the head.
Examples: PREP-RMOD-PARTICIPANT: "Ho visto un [film]$_H$ [con]$_D$ Jack Nicholson" -
"(I) have seen a [film]$_H$ [with]$_D$ Jack Nicholson"

39.PARTECTO
It indicates to which event the head participates.
Examples: PREP-RMOD-PARTECTO: "I [protagonisti]$_H$ [de]$_D$l rally dei Faraoni" -
"The [protagonists]$_H$ [of]$_D$ the rally of Pharaohs"

40.PARTITIVE
It indicates a partition of the head set.
Examples: PREP-RMOD-PARTITIVE: "La [percentuale]$_H$ [di]$_D$ famiglie senza figli" –
"The [percentage]$_H$ [of]$_D$ families without children"

41.PERCENT
It indicates a percentage of the head.
Examples: NUM-ARG-PERCENT: "L'[80]$_H$ [per]$_D$ cento" - " The [80]$_H$ [per]$_D$ cent";
PREP-ARG- PERCENT: "L'[80]$_H$ [per]$_D$ cento" - " The 80 [per]$_H$ [cent]$_D$"

42.PERSPECT
It describes a perspective about the head.
Examples: PREP-RMOD-PERSPECT: "[È]$_H$ interessante [da]$_D$l punto di vista della
rappresentazione sintattica" - "(It) [is]$_H$ interesting [from]$_D$ the point of view
of the syntactic representation"

43.PRIVATIVE
It describes a lacking of the head.
Examples: PREP-RMOD-PRIVATIVE: "[Famiglie]$_H$ [senza]$_D$ figli" - "[Families]$_H$
[without]$_D$ sons"

44.PROGRESS
It indicates in what the head is developing.
Examples: VERB-INDCOMPL-PROGRESS: "La situazione [stava]$_H$ [per]$_D$ esplodere" –
"The situation [was going]$_H$ [to]$_D$ explode"

45.PROPERTY
It represents a property of the head.
Examples: PREP-RMOD-PROPERTY: "[attici]$_H$ [con]$_D$ vista" – "[penthouse]$_H$ [with]$_D$
view"

46.PROPERTYOWNER
It indicates the owner of a property described by the head.
Examples: PREP-RMOD-PROPERTYOWNER: "La [popolarità]$_H$ [de]$_D$l deputato era molto
elevata" - "The [popularity]$_H$ [of]$_D$ the delegate was very high"

47.RANGE
It indicates the range of the head.

Examples: PREP-RMOD-RANGE "Il servizio funziona [da]$_H$ lunedì [a]$_D$ venerdì" - "The service works [from]$_H$ Monday [to]$_D$ Friday"

48.REASONCAUSE
It describes the reason or cause of the head.
Examples: VERB+FIN-RMOD-REASONCAUSE: "[Ingrassa]$_H$ [perchè]$_D$ mangia troppo" - "(She/he) [fatten]$_H$ [because]$_D$ (she/he) eat too much"

49.RELATTO
It represents something to which the head is related.
Examples: PRE-RMOD-RELATTO: "Mary [secondo]$_D$ me [è]$_H$ bella" - "Mary [according to]$_D$ me [is]$_H$ beautiful"

50.RESULT
It represents the result of the head.
Examples: VERB-INDCOMPL-RESULT: "Questo sentimento potrebbe [degenerare]$_H$ [in]$_D$ xenofobia" - "This feeling could [degenerate]$_H$ [in]$_D$ xenophobia"

51.ROLEIN
It shows in what the head play a role.
Examples: PREP-RMOD-ROLEIN: "Il [leader]$_H$ [de]$_D$l sindacato" - "The [leader]$_H$ [of]$_D$ the trade union"

52.SITDESCR
The description of the situation described by the head.
Examples: VERB+FIN-RMOD-SITDESCR: "Udì la [notizia]$_H$ [che]$_D$ erano arrivati nella notte" - "(She/he) heard the [news]$_H$ [that]$_D$ (they) was arrived during the night"

53.SITUATION
It describes the situation where the head happens.
Examples: VERB+INF-RMOD-SITUATION: "I ragazzi [gridavano]$_H$ [vedendo]$_D$ quella macchina" - "The boys [cried out]$_H$ [seeing]$_D$ that car"

54.SOURCE
It indicates the source of the head.
Examples: PREP-RMOD-SOURCE: "Hanno [tratto]$_H$ beneficio [da]$_D$lla riforma fiscale" - "(They) [derived]$_H$ benefit [from]$_D$ the taxation reform"

55.STRENG
It gives more streng to the event described by the head.
Examples: ADVB-RMOD-STRENG: "[Inoltre]$_D$ Mary [arrivò]$_H$ tardi" – "[Moreover]$_D$ Mary [arrived]$_H$ late"

56.SUBCLASS
It describes a subclass of the head.
Examples: PREP-RMOD-SUBCLASS: "Varie [specie]$_H$ [di]$_D$ funghi" - "Various [species]$_H$ [of]$_D$ mushrooms"

57.SUBDIVISION
It indicates among who/what the head is divided.
Examples: PREP-RMOD-SUBDIVISION: "Una [cooperazione]$_H$ [tra]$_D$ aree di ricerca" – "A [cooperation]$_H$ [among]$_D$ research areas"

58.THEME
It describes the theme of the head.
Examples: VERB-INDCOMPL-THEME: "John [parla]$_H$ raramente [de]$_D$lla sua famiglia" - "John [talks]$_H$ seldom [about]$_D$ his family"

59.TIME: +APPROX, +DAY, +DISTRIB, +DUR, +MONTH, +OF, +YEAR
It describes the time in which the head happens in its various forms.
Examples: PREP-RMOD-TIME+APPROX: "[Accadde]$_H$ [verso]$_D$ la fine del secolo" – "(It) [happened]$_H$ [around]$_D$ the end of the century"; PREP-RMOD-TIME+DAY: "Gli [eventi]$_H$ [di]$_D$ domani" - "The [events]$_H$ [of]$_D$ tomorrow"; PREP-RMOD-TIME+DISTRIB:

"John [arriverà]_H [tra]_D quindici giorni" – "John [will arrive]_H [in]_D fifteen days"; PREP-RMOD-TIME+DUR: "Il servizio è [sospeso]_H [per]_D un mese" – "The service is [interrupted]_H [for]_D one month"; PREP-RMOD-TIME-MONTH: "Il [consiglio]_H di amministrazione [del febbraio]_D 1988" – "the [board]_H of directors [of]_D February 1988"; PREP-RMOD-TIME+OF: "Il [centenario]_H [de]_Dlla morte di Verdi" – "The [hundredth anniversary]_H [of]_D the death of Verdi"; PREP-RMOD-TIME+YEAR: "Il [febbraio]_D [del]_D 1988" – "the [February]_D [of]_D 1988"

60.TOGETHER
It indicates who is together with the head.
Examples: PREP-RMOD-TOGETHER: "Mary [parlerà]_H di John [con]_D lui" - "Mary [will talk]_H about John [with]_D him"

61.TOPIC
It describes the topic of the head.
Examples: PREP-RMOD-TOPIC: "Il [Salone]_H internazionale [de]_Dll'automobile" – "The international [show]_H [of]_D motor"

62.TRANSPMEANS
It describes the means of transport of the head.
Examples: PREP-RMOD-TRANSPMEANS: "Mary [partirà]_H [in]_D aereo" – "Mary [will start]_H [by]_D plane"

63.TYPE
It indicates the type of the head.
Examples: PREP-RMOD-TYPE: "Le [grammatiche]_H [a]_D dipendenze" – "The [dependency]_D [grammars]_H"

64.VALUE
It describes the value of the head in terms of money.
Examples: PREP-RMOD-VALUE: "John ha [comprato]_H un appartamento [per]_D dieci milioni di Euro" – "John [bought]_H a flat [for]_D ten millions of Euro"

65.VOCATIVE
It describes the fact that the head is attracting the attention of someone calling directly him.
Examples: NOUN-RMOD-VOCATIVE: "Per favore, [John]_D, [puoi]_H aiutarmi?" – "Please, [John]_D, [can]_H (you) help me?"

66.WEAR
It describes what the head is wearing.
    67.Examples: PREP-RMOD-WEAR: "Un [uomo]_H [in]_D giacca e cravatta" – "A [man]_H [in]_D jacket and tie"

68.WHOLEOBJ
It represent the whole object of which the head is part.
Examples: PREP-RMOD-WHOLEOBJ: "La [sala]_H [de]_Dl conservatorio" – "The [hall]_H [of]_D the conservatory"

69.YEAR
It represents the number of a year which is the head.
Examples: DATE-RMOD-YEAR: "gli [anni]_H ['50]_D" – "the [years]_H ['50]_D"

4. Other labels for relations

It is possible to find in the sentences the following relations composed by a couple of grammatical relations separated by slash:

1. VERB-SUBJ/VERB-INDCOMPL-AGENT
2. VERB-OBJ/VERB-SUBJ
3. VERB-PREDCOMPL+OBJ/VERB-PREDCOMPL+SUBJ
4. VERB-SUBJ/VERB-SUBJ+IMPERS
5. VERB-SUBJ/VERB-OBJ
6. VERB-SUBJ/VERB-INDOBJ

In these labels the "/" indicates a transformation, a difference between surface and deep syntactic structure. The transformations of the above list respectively concern the passive form (1. and 2.) (or their consequences on predicative complement (3.)) and include the surface SUBJ which become deep OBJ and the surface INDCOMPL-AGENT which become deep SUBJ; the impersonal transformation of subject; and the causative construction (explained in the pertinent paragraph in linguistic notes) where the deep subject of the infinitive verb can be the surface object or indirect object of the causative verb. See section 3 for the examples of relations including transformation.

As well as *LOCUT (described in note 1) it is possible to find another kind of label introduced by *: the label CLEFT has been associated to the relation VERB-PREDCOMPL+SUBJ (obtaining VERB-PREDCOMPL+SUBJ*CLEFT) when that relation occurs in a cleft sentence structure (explained in the pertinent paragraph of linguistic notes).