Annotating Italian Social Media Texts in Universal Dependencies

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About

PoSTWITA-UD:

a collection of Italian texts from Twitter annotated according to the **Universal Dependencies** format

<u>Goals</u>:

- create a treebank of social media texts
- contribute to the wider debate about social media text processing and analysis

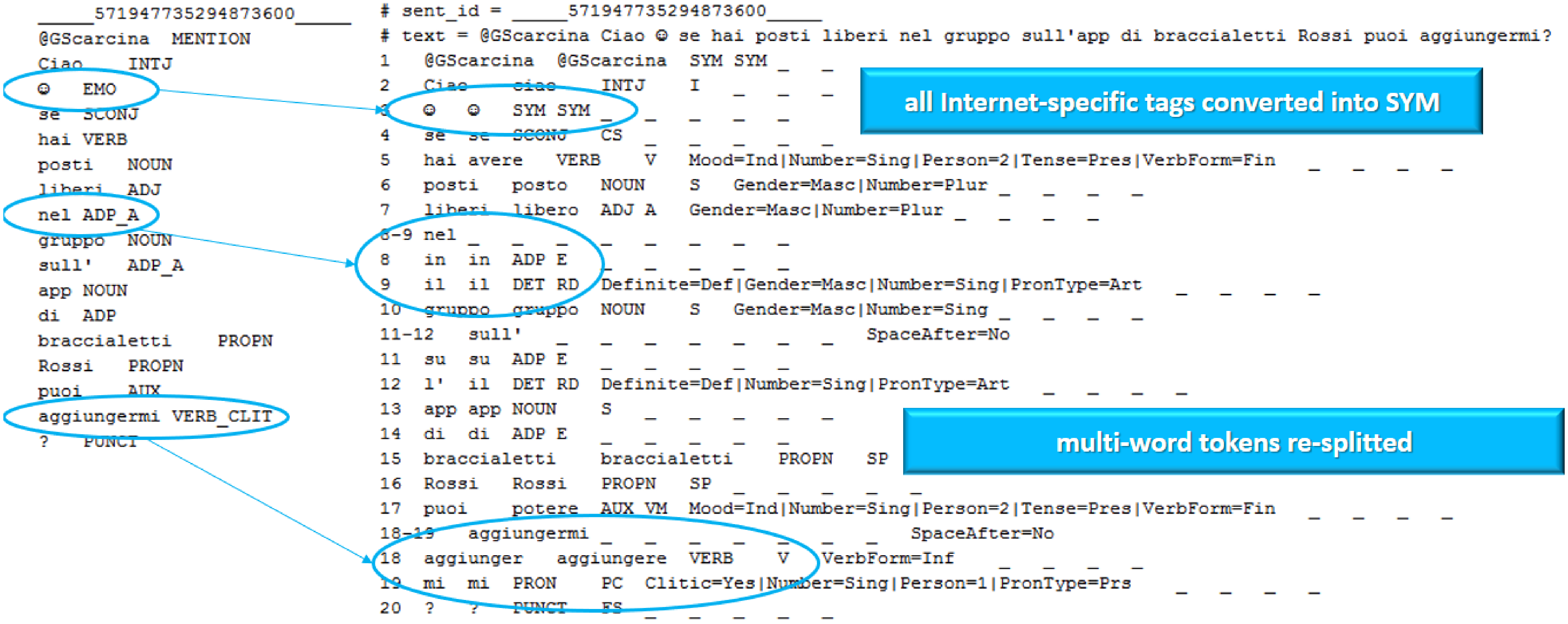
Dataset

Developed by processing and further enriching the **PoSTWITA** corpus: the dataset used for the EVALITA 2016 task on Part-of-Speech tagging of social media

Composition:

- dev set: 6,438 tweets (114,967 tokens)
- test set: 300 tweets (4,759 tokens)

Treebank Preprocessing



PoSTWITA

```
_____571947735294873600_____
@GScarcina  MENTION
Ciao    INTJ
☺   EMO
se  SCONJ
hai VERB
posti   NOUN
liberi  ADJ
nel ADP_A
gruppo  NOUN
sull'   ADP_A
app NOUN
di  ADP
braccialetti    PROPN
Rossi   PROPN
puoi    AUX
aggiungermi VERB_CLIT
?   PUNCT
```

PoSTWITA-UD

```
# sent_id = _____571947735294873600_____
# text = @GScarcina Ciao ☺ se hai posti liberi nel gruppo sull'app di braccialetti Rossi puoi aggiungermi?
1   @GScarcina  @GScarcina  SYM SYM _   _
2   Ciao    ciao    INTJ    I   _   _   _
3   ☺   ☺   SYM SYM _   _   _   _   _
4   se  se  SCONJ   CS  _   _   _   _   _
5   hai avere   VERB    V   Mood=Ind|Number=Sing|Person=2|Tense=Pres|VerbForm=Fin   _   _   _   _
6   posti   posto   NOUN    S   Gender=Masc|Number=Plur _   _   _   _
7   liberi  libero  ADJ A   Gender=Masc|Number=Plur _   _   _   _
8-9 nel _   _   _   _   _   _   _   _
8   in  in  ADP E   _   _   _   _   _
9   il  il  DET RD  Definite=Def|Gender=Masc|Number=Sing|PronType=Art   _   _   _   _
10  gruppo  gruppo  NOUN    S   Gender=Masc|Number=Sing _   _   _   _
11-12   sull'   _   _   _   _   _   _   _   SpaceAfter=No
11  su  su  ADP E   _   _   _   _   _
12  l'  il  DET RD  Definite=Def|Number=Sing|PronType=Art   _   _   _   _
13  app app NOUN    S   _   _   _   _   _
14  di  di  ADP E   _   _   _   _   _
15  braccialetti    braccialetti    PROPN   SP
16  Rossi   Rossi   PROPN   SP  _   _   _   _   _
17  puoi    potere  AUX VM  Mood=Ind|Number=Sing|Person=2|Tense=Pres|VerbForm=Fin   _   _   _   _
18-19   aggiungermi _   _   _   _   _   _   _   SpaceAfter=No
18  aggiunger   aggiungere  VERB    V   VerbForm=Inf    _   _   _   _
19  mi  mi  PRON    PC  Clitic=Yes|Number=Sing|Person=1|PronType=Prs    _   _   _   _
20  ?   ?   PUNCT   FS  _   _   _   _   _
```

all Internet-specific tags converted into SYM

multi-word tokens re-splitted

lemmas and morphological features added using AnIta*

*(Tamburini and Melandri, 2012)

Parsing Experiments

- train:

  UD_Italian v.2 (11,699 sentences)

- test:

  1) PoSTWITA test set (300 tweets)

  a) with lemmas and language-specific tags (-LF)

  b) with morphological features (-F)

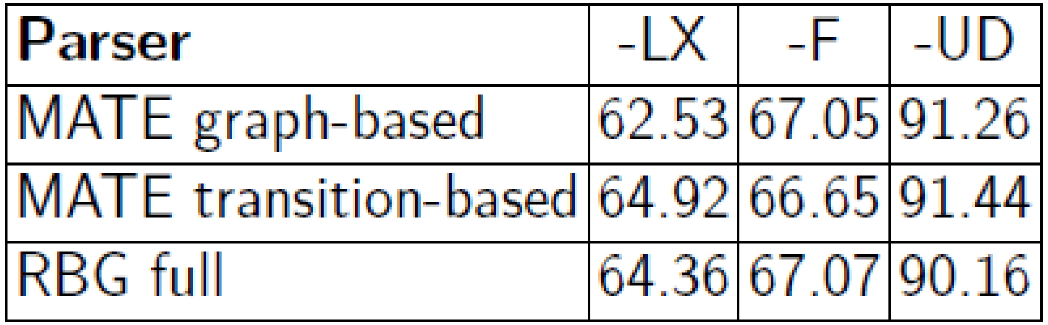
  2) UD_Italian test set (489 sentences) (-UD)

- evaluation metric: *LAS* F_1

Parsing Experiments

- train:

  UD_Italian v.2 (11,699 sentences)



Parser	-LX	-F	-UD
MATE graph-based	62.53	67.05	91.26
MATE transition-based	64.92	66.65	91.44
RBG full	64.36	67.07	90.16

- test:

  1) PoSTWITA test set (300 tweets)

  a) with lemmas and language-specific tags (-LF)

  b) with morphological features (-F)

  2) UD_Italian test set (489 sentences) (-UD)

- evaluation metric: *LAS* F_1

Annotation Guidelines

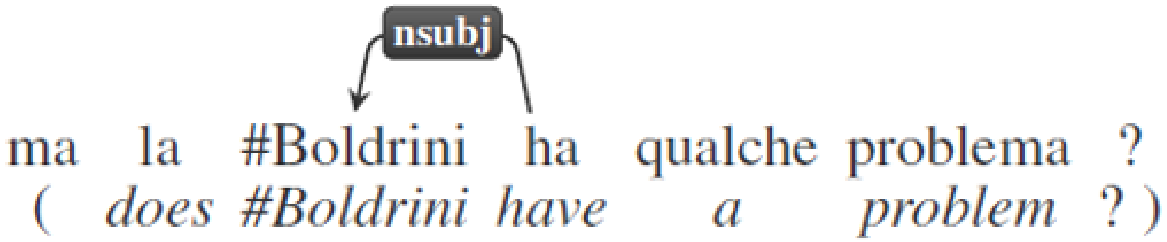
Challenging aspects of Twitter language and its analysis:

- continuous shift from written to spoken language, and *vice versa*
- hashtags, mentions/replies, emoticons/emojis, and other conventions of computer-mediated communication
- unconventional, even unintelligible, elements (e.g. unknown/mispelled words)

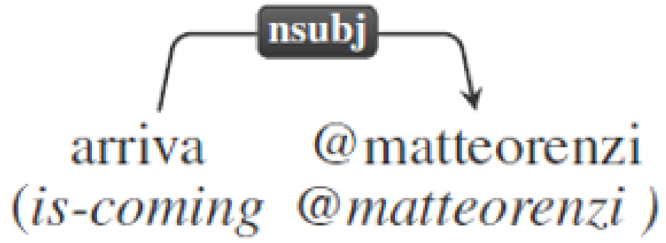
Annotation Guidelines

How we dealt with them in annotation:

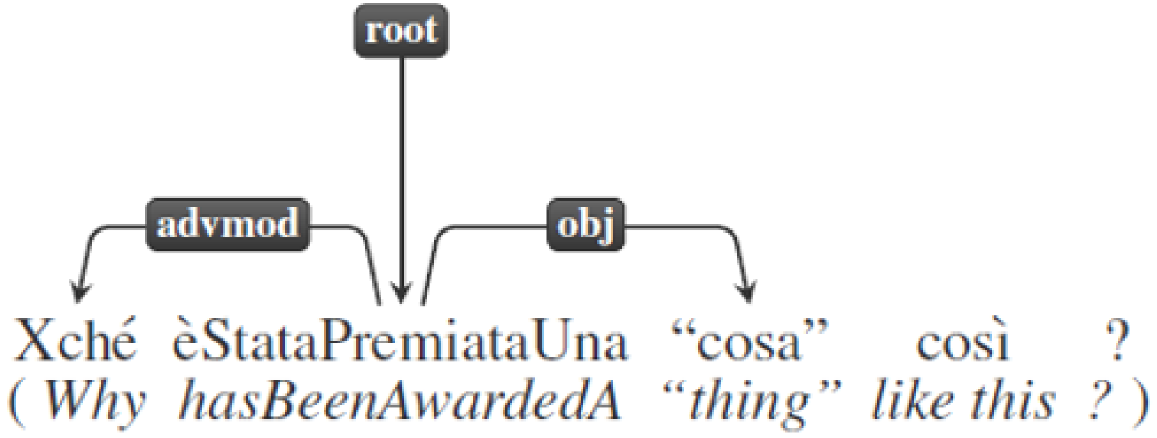
- (if syntactically integrated) assigning them their corresponding syntactic role



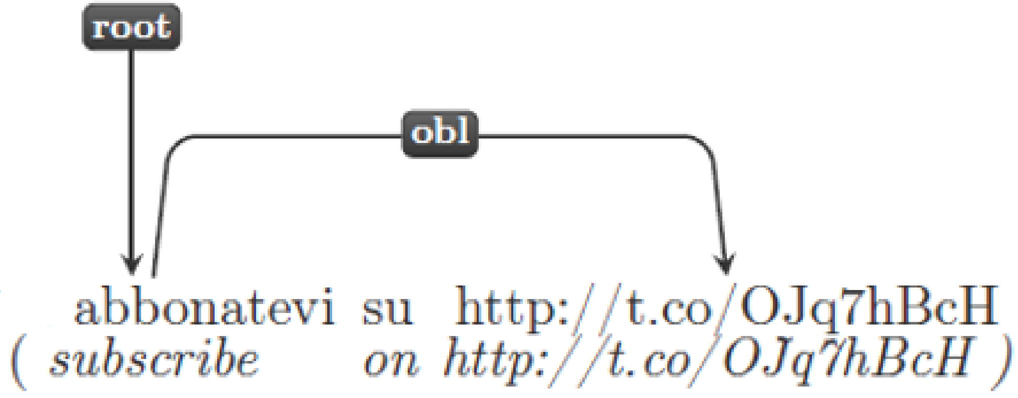
ma la #Boldrini ha qualche problema ?
(*does #Boldrini have a problem ?*)



arriva @matteorenzi
(*is-coming @matteorenzi*)



Xché èStataPremiataUna “cosa” così ?
(*Why hasBeenAwardedA “thing” like this ?*)



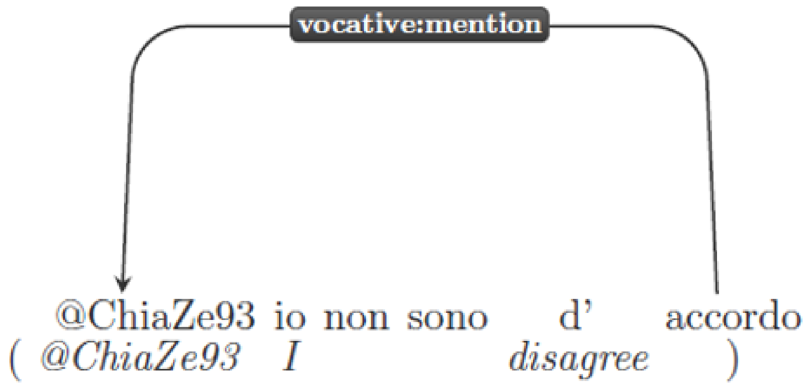
abbonatevi su http://t.co/OJq7hBcH
(*subscribe on http://t.co/OJq7hBcH*)

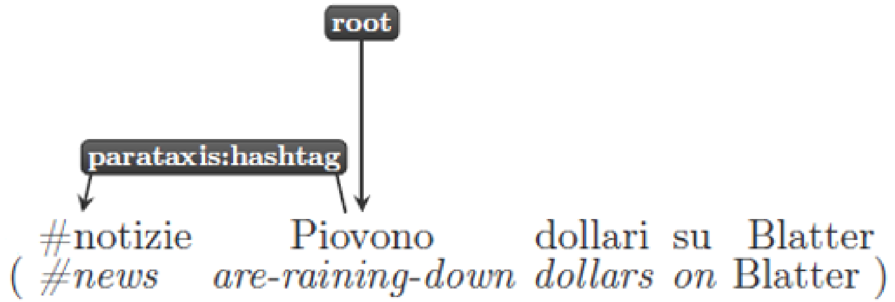
Annotation Guidelines

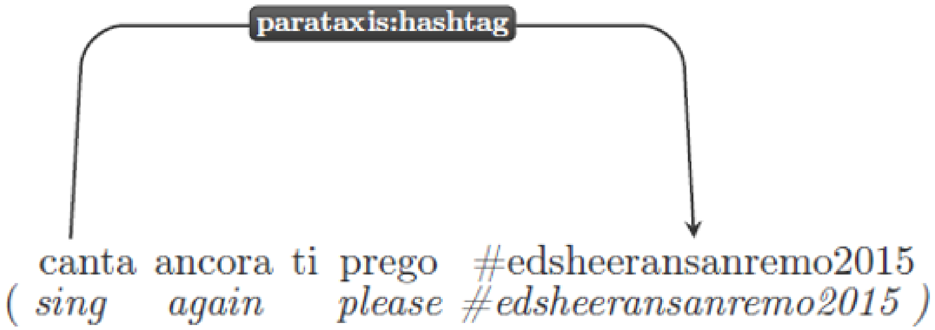
How we dealt with them in annotation:

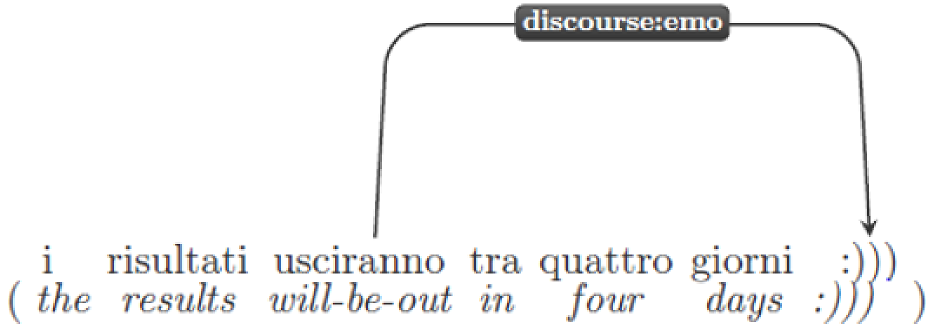
- extending the already existing relations with specific subtypes

either new




root
parataxis:hashtag
#notizie Piovono dollari su Blatter
(#news are-raining-down dollars on Blatter)


parataxis:hashtag
canta ancora ti prego #edsheeransanremo2015
(sing again please #edsheeransanremo2015)

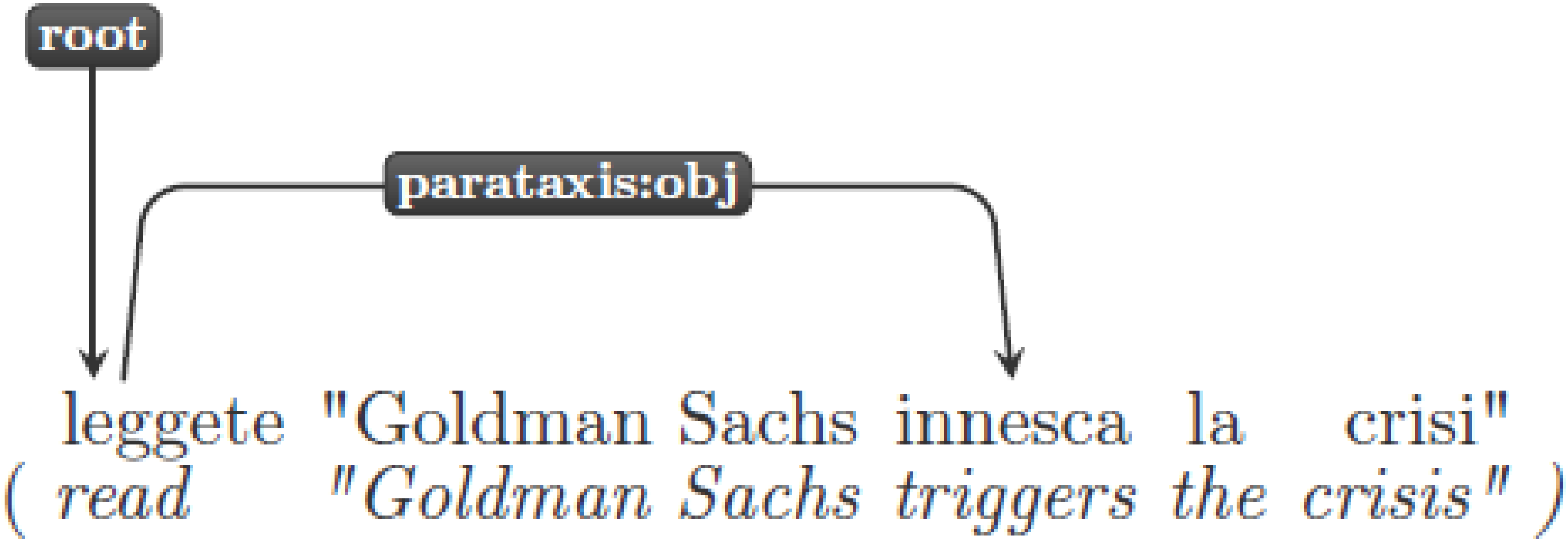

discourse:emo
i risultati usciranno tra quattro giorni :)))
(the results will-be-out in four days :))))

Annotation Guidelines

How we dealt with them in annotation:

- extending the already existing relations with specific subtypes

  … or mutated from other treebanks



leggete "Goldman Sachs innesca la crisi"

(*read "Goldman Sachs triggers the crisis"*)

Future Work

Short-term goals:

- Complete annotation and guidelines (first release expected: November 2017 – UD v.2.1)
- Extend parsing experiments using the resource as *training* set
- Use the resource for Sentiment Analysis applications

Long-term goals:

- Enrich the resource with texts from other social media
- Open this work to a multilingual comparison

Thank you!