

# Coreference annotation with SACR, a new drag-and-drop based tool

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## SACR and its context

- NLP applications need large, manually annotated corpora but careful annotation is time consuming, so annotation tools must require the least effort from the annotator.
- Furthermore, annotation is often done by students, interns or non-technical users, so annotation tools must be ready-to-use and have an intuitive interface.
- SACR (“Script d’Annotation des Chaînes de Référence”) is implemented as a simple web page (HTML and Javascript) running in Firefox and Chrome: it is thus cross-platform.
- Easy to use, with no learning time and no installation, it is well-suited for students and interns of literary background.
- It is open source (MPL-2.0) and available at [boberle.com/projects/sacr](http://boberle.com/projects/sacr).

## Coreference annotation with SACR

1. Delimiting and marking referring expressions (*i.e.* linguistic expressions that refer to some extra-linguistic entity) is done by clicking on the first and last tokens of the expression.
2. Linking two coreferential expressions is done by drag-and-dropping the expressions one over the other.
3. Feature annotation (part of speech, grammatical function, etc.) is done by selecting an attribute from a list or by using shortcut keys (like “d” for a noun with a definite article or “r” for a relative pronoun): the program then goes automatically to the next expression to be annotated

## Coreference Annotation Script 5.0.0 ([help](#))

#title:Le Laboureur et l'Aigle (Ésope, Fables, traduction Chambry)

[#1] **laboureur** Un laboureur, **laboureur** Ø ayant trouvé **aigle** un aigle pris **filet** au filet, fut si frappé de **beauteAigle** **aigle** sa beauté qu'**laboureur** **il** **aigle** le délivra et **aigle** lui **laboureur** Ø donna **liberteAigle** la liberté. **aigle** L'aigle ne **aigle** se montra pas ingrat envers **laboureur** **aigle** son bienfaiteur; mais **laboureur** le **aigle** Ø voyant **mur** un mur **mur** qui menaçait ruine, **aigle** **il** vola vers **laboureur** **lui** et **aigle** ses griffes **aigle** ses griffes **bandeau** le bandeau **bandeau** qui avait teteLaboureur la tête. **laboureur** L'homme **laboureur** se leva

## Chains and Links

**laboureur**

**aigle**

un aigle pris au filet

sa  
le  
lui  
L'aigle  
se  
son  
Ø  
il  
Ø  
ses  
sa  
L'aigle

**filet**

au filet

**beauteAigle**

sa beauté

**liberteAigle**

la liberté

## Features to help the annotator

- A list of chains and their elements where the annotator can access all the annotations and drag-and-drop them from or to the main window.
- A tool to search elements by feature (*e.g.* all nouns and/or pronouns, all subjects, etc.) or to check that no annotation has been forgotten.

## Export and exchange formats

- Annotations are stored in an easy-to-parse text format.
- Scripts allow to convert from or to Glozz (Widlöcher & Mathet 2012), TXM (Heiden 2010), Analec (Landragin, Poibeau & Victorri 2012) and the CONLL-2011 format.
- SACR can be used alongside automatic annotation tools like a chunker or a part of speech tagger, allowing a succession of manual and automatic steps, as used in the Democrat project (Poudat & Landragin 2017).

## References

- Heiden S. (2010). The TXM Platform: Building Open Source Textual Analysis Software Compatible with the TEI Encoding Scheme. In Ryo Otaguro, *et al.* (eds.), *24<sup>th</sup> Pacific Asia Conference on Language, Information and Computation*. Sendai, Japan. Wasea University.
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- Poudat C. and Landragin F. (2017). *Explorer un corpus textuel*. Champs linguistiques. De Boeck.
- Widlöcher A. and Mathet Y. (2012). The Glozz Platform: A corpus annotation and mining tool. In *Proceedings of the 2012 ACM symposium on Document engineering*.

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