Rhetorical Figure Detection: the Case of Chiasmus

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Stylometric tools: example affect life combinations alternatives non-thesaurus The most powerful myth affecting everyday life narrates the less decisive the plot unfolds will be seen to affect the lives and personalities of the characteries conviction that national affairs affect one's life and so need to be considered. Set that parliametrary reform has affected the lives of most readers of this paperfrom the European Commission are affecting business life in Britain. otently, for a verdict that will affect their jobs and lives. Christianity affects our lives.

- Match string, words, shallow pattern
- More? Pun? Chiasmus?





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Chiasmus: Traditional Definition

A rhetorical figure in which two words are repeated in reverse order.

Introduction

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Our objective: building a chiasmus retrieval engine.



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The research on chiasmus

 Gawryjolek [2009]: Extract every double pair of words with reverse order without exception Chuck Norris does not fear death, death fears Chuck Norris

- 100% recall
- Very low precision (< 1%)
- Hromada [2011]: Identify not two but three pairs of reverted words

Love makes time pass, time makes love pass.

- Very high precision
- But low recall

Problem

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'I like beer from time to time but I prefer wine'

They are frequent but chiasmi are rare. Annotated corpus never made and nearly impossible.

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This is the problem of the needle in the haystack!

(Re-)Defining the Task

The analogy with information retrieval

- Approach: Rank the results
- Evaluation: Precision on top N result

Thus we limit the annotation to the top 200 results



Corpus

Characteristics

- Language: English
- Source: Europarl

2 corpora

First corpus: Tuning, we hand-tune our weights on it. Second corpus: Evaluation, we perform final evaluation for 4 categories of features

An Example of Features

First should be last and

last should be first.

I like beer from time to

time . But I prefer wine.

How our algorithm sorts criss-cross patterns: 5 representative examples of our 20 features

An Example of Features



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Our Model

A standard linear model

We encode 4 different types of features:

- Basic (stopwords and punctuation)
- Size
- Ngram
- Lexical Features

Based on a basic linear model, we give a score to every criss-cross pattern relative to those features.

This score allows us to rank chiasmi.



Average precision, and precision at a given top rank, for each experiment.

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Comparison table			
	+Lex.	3	2
	clues	pairs	pairs
	[2015]	[2011]	[2009]
Precision	7/9	6/9	0/9
Precision (%)	78	67	0
	·		

=> Precision comparable to [2011]=> And improved recall (17/200)

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= And improved recall (17/200)

Future Work

- Statistical significance? Results on 19 true occurrences
- From hand-tuned weights to machine learning
- More annotation with more annotators
- What about structural syntactic features?

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 - True: Food should be our medicine and medicine our food.
 - *Borderline*: If all this is not **helped** by a **fund**, the **fund** is no **help** at all.
 - False: The two basic issues are whether we intend to harmonise social policy and whether the power of the Commission will be extended to cover social policy issues

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- 2 1200 annotated criss-cross patterns
- **③** Tested features and weights with up to 61% Ave P.
- An evaluation methodology reducing our annotation work by a factor of 1000.

and...

A system that works on any text file! Demonstration?

- Bible, 800 000 words
- Sherlock Holmes, 650 000 words

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Thank You!

Questions?

Gawryjolek, J. J. (2009). Automated Annotation and Visualization of Rhetorical Figures. Master thesis, University of Waterloo.

Hromada, D. D. (2011). Initial Experiments with Multilingual Extraction of Rhetoric Figures by means of PERL-compatible Regular Expressions. In *Proceedings of the Second Student Research Workshop associated with RANLP 2011*, (pp. 85–90)., Hissar, Bulgaria.

System, corpus, annotation available at:

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References

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