



Clues for Detecting Irony in User-Generated Contents: Oh...!! It's "so easy" ;-)

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Motivation

- In *Sarmiento et al.* [TSA 2009]:
 - Extraction of **opinions** about relevant **political actors** from **comments** posted by readers to an on-line newspaper
 - Precision of detected **positive opinions** is much **lower** (~60%) than detected negative opinions (~ 90%)
 - One of the major sources of error (~35% of the cases) is related to **verbal irony**
- **Is verbal irony automatically detectable in comments?**

Verbal Irony

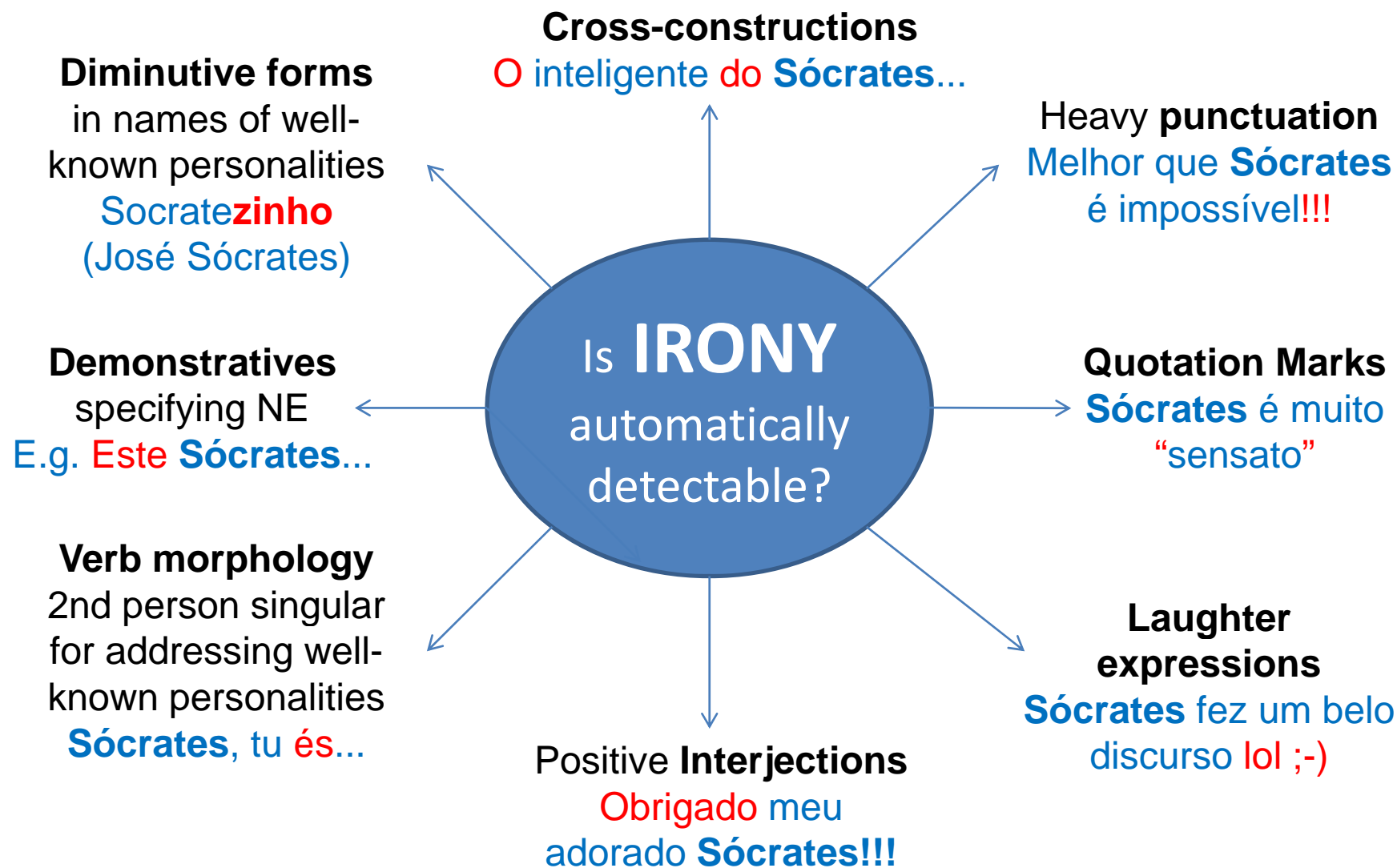
- Rhetorical process of **intentionally** using words or expressions for uttering a **distinct meaning from the literal**
- May be expressed by a variety of **figurative devices**
 - sarcasm, hyperbole, rhetorical questions, jocularity, ...
(differences may be hard to distinguish in practice)
- We refer to irony as **the use of a word or expression with prior positive polarity for expressing a negative opinion in *secondary orality***

Secondary Orality

[Ong, 1982]

- ***Writing as talking*** in interpersonal communication
 - Short, reactive comments
 - Expression of immediate emotions
 - Relaxed writing style
 - Usage of symbolic combinations of characters and other iconographic symbols
- **Irony is fair game**
 - Represented in secondary orality in a very explicit way

Detecting Irony in Portuguese UGC





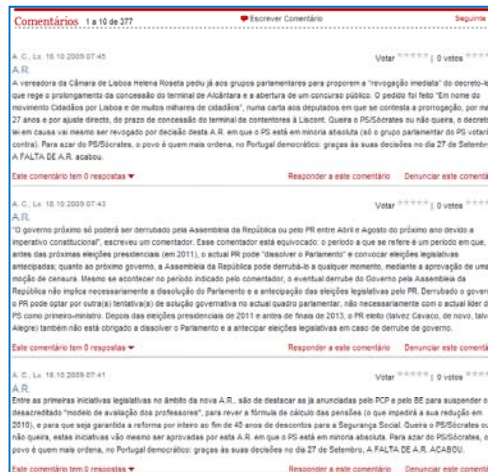
Patterns Explored

Pattern	Context	Example	Lit. translation
Pdim	(4-Gram ⁺ NE _{dim} / NE _{dim} 4-Gram ⁺)	O nosso Socratez inho é perfeito	Our <i>Socratezinho</i> is perfect
Pdem	DEM NE 4-Gram ⁺	Este Sócrates é um doce...	This Sócrates is a sweet...
Pverb	NE (tu)* ser _{2s} 4-Gram ⁺	Sócrates tu és um espectáculo!	Sócrates you are a spectacle!
Pcross	(DEM ART) (ADJ _{pos} ADJ _{neut}) de NE	O inteligente do Sócrates	The intelligent of Sócrates
Pitj	ITJ _{pos} (DEM ADJ _{pos})* NE (? ! ...)	Obrigado meu adorado Sócrates!	Thanks my beloved Sócrates!
Ppunct	4-Gram ⁺ (!!! !?! ?)	O Sócrates é mesmo muito importante!!!!	Sócrates is really important!!!!
Pquote	“(ADJ _{pos} N _{pos}){1,2}”	Sócrates é um exemplo de “máxima perfeição”	Sócrates is an example of “maximum perfection”
Plough	(LOL AH EMO ⁺)	Sócrates fez um belo discurso eheheh	Sócrates made a nice speech eheheh

Experimental Set-up



8,211 news
 (Nov. 2008 to Mar. 2009)



250,000 comments
 (~1 Million sentences)

Lexicon of
 political actors
 1226 names

Sentiment
 Lexicon
 6055 entries

Selected
 129,251 sentences

Rules for
 Irony Detection
 (8 patterns)

Potential
 Ironic sentences
 involving PE
 (1,832 sentences)

- P dim 0*
- P dem 42*
- P verb 22*
- P cross 11*
- P itj 127*
- P punct 385*
- P quote 697*
- P laugh 548*

LSP
 Lexicon

Error Analysis

Patterns that matched more than 100 sentences

Pattern	Pattern	Ironic	Not Ironic	Undecided	Ambiguous
Pitj	ITJ _{pos} (DEM ADJ _{po})* NE (? ! ...)	44,88	13,39	40,94	0,79
Ppunct	4-Gram ⁺ (! ! ! ? ?!)	45,71	27,53	26,75	0,00
Pquote	“(ADJ _{pos} N _{pos}){1,2}”	68,29	21,95	2,73	7,03
Plough	(LOL AH EMO ⁺)	85,40	0,55	11,13	2,92

Rhetorical questions:

Onde estão as alternativas democráticas?!.. .

Where are the democratic alternatives?!...

Named entities and brand names:

Desde há séculos o chamavam “Santo Contestável”

Many centuries ago [they] called him “Saint Contestável”

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Parabéns Fonseca, por ter dito a verdade com tanta simplicidade!

Congratulations Fonseca, for having told the truth with so much simplicity!

Main Conclusions

This **exploratory work** shows that:

- Ironic opinions are detectable in comments
 - Relatively simple linguistic clues are effective
- Ironic constructions are frequently signaled by “oral” clues in secondary orality

Future Work

- Improve precision by considering different clues in combination
 - ironic sentences usually contain more than one linguistic evidence
- Improve automatic reference corpus annotation by using the irony detection rules in polarity assignment and propagation
- More comprehensive study of other uses of irony:
 - other manifestations of secondary orality
 - diverse social media
 - multiple languages