

# Learning Sentiment Polarity of Multiword Expressions



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# What?



- Previous work
  - Contextual polarity of single words
- Our work
  - Contextual polarity of multiword expressions
- MWE = multiple words that are one single lexical item.
  - throw up, make out, kick the bucket
- Train a classifier that can find sentiment of MWEs

# Why?



- **Noncompositional semantics == noncompositional polarity**
  - Problem:  $\text{sentiment}(\text{playing with fire}) \neq \text{sentiment}(\text{play}) + \text{sentiment}(\text{with}) + \text{sentiment}(\text{fire})$
  - Solution: special classifier
- **Noncompositional semantics == hard to detect**
  - Kick the bucket vs Kick the ball
  - One approach is to use semantic context (a la lesk)
  - Maybe “polarity context” will help us detect them?

# How?



- Based off of the paper *Recognizing Contextual Polarity in Phrase-Level Sentiment Analysis* by Wilson et al.
- Create a list of MWEs from the figurative language category of Wiktionary.
- Treat the sentiment of these expressions from the Stanford Sentiment Treebank as the gold standard.
- Using the same corpus used to build the Treebank, create a list of contextual features for each MWE.
- Use these features and the gold standard to train a classifier.

# Features

- POS
- Prior polarity (General Inquirer)
- Previous/next 1 and 2 words
- Previous/next POS
- Contains intensifier?
- Sentence has pronoun?
- Sentence has modal?
- Adjective count
- Adverb count
- Weak/strong subjectivity clue count (MPQA)
- Subjective modifier count

# Progress



	MWEs Count	Accuracy
Training	1478	83%
Testing	987	53%

	Negative	Very Negative	Neutral	Positive	Very Positive	Total
Negative	173	0	60	87	0	320
Very Negative	3	0	1	2	0	6
Neutral	72	0	187	87	0	348
Positive	78	0	68	162	0	308
Very Positive	1	0	3	2	0	5

# This week



- Things we will do
  - 2 classifiers
    - ✦ Binary: Neutral vs polar
    - ✦ Positive vs Very Positive vs Very Negative vs Negative
  - Feature Ablation
  - Use definitions from Wiktionary
    - ✦ Playing with fire -> in a dangerous situation
- Things we wont do
  - Incorporate sense information
    - ✦ Kick the bucket (fig.) vs Kick the bucket (lit.)