A Sociolinguistic Analysis of Emotives in Irish English

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New Perspectives on Irish English 5
Introduction

- Communicating one’s emotional state is a core element of language.
- Almost no corpus-based research on how speakers convey their emotions to others or on sociolinguistic differences in emotional language.
- Existing research on the verbalization of emotion is typically related to
  - subjectivity (Langacker 1985; Lyons 1981);
  - expression of stance (cf. e.g. Goodwin et al. 2012);
  - conceptual metaphor theory (cf. e.g. Kövecses 2003; Meier and Robinson 2005);
  - componential analysis (Wierzbicka 1992)
Introduction

- Synchronic quantitative corpus–based study of emotives in Irish English based on the Irish component of ICE Ireland 1.2.2 (Kirk and Kallen 2008).

- Emotives are words associated with one of eight core emotions (ANGER, ANTICIPATION, DISGUST, FEAR, JOY, SADNESS, SURPRISE, TRUST) (cf. Ekman 1992; Plutchik 1980) (cf. (1))

(1) a. SADNESS: cry, tragedy, etc.
   b. JOY: happy, beautiful, etc.
   c. ANGER: fit, burst, etc.

- The present study analyses correlations between emotive use and extra-linguistic factors.
Sentiment Analysis

- Application of a sentiment analysis to code for emotional language use of socially distinct groups
- Widely used by companies to track the public reception of products/to check for potential issues or problems
- Core technique in computational linguistics (Feldman 2013; Liu and Zhang 2012; Younis 2015)
- First core linguistic studies utilizing this method (Hoffmann 2017; Joyce and Deng 2018)
- Inter-subjective and replicable coding of emotion (advantage)
Emotions and language

- Women talk more emotional than men (Aldrich and Tenenbaum 2006; Coates 2015; Lakoff 1973; Tannen 1994; Wolf 2000)
- Women talk more about emotions (Goldshmidt and Weller 2000)
- Women report being more emotionally expressive (Bronstein et al. 1996; Brebner 2003)
- Gender specific effects
  - Women being and expressing sadness more than men (Grossman and Wood 1993)
  - Girls report more frequent sadness compared to male peers (Brody 1984; Stapley and Haviland 1989).
  - Boys express anger more readily than girls (Brody 1984).
Hypotheses

- $H_A$
  Women show the highest frequencies of emotives compared with men (Aldrich and Tenenbaum 2006; Coates 2015)

- $H_B$
  Women show the highest frequencies of overall and positive emotives ($\text{JOY}$) compared with men

- $H_C$
  Men use higher frequencies of negative emotives ($\text{ANGER}$) compared with women (Brody 1984)

- $H_D$
  Men adapt to women in mixed-gender conversations (cf. Wolf 2000)
Data (Processing)

The Irish component of the *International Corpus of English* (ICE) (Kirk and Kallen 2008)

- Split spoken dialogue data into utterances
- Removal of meta information
- Part–of-speech tagging
  - PoS–tagging via tidytext library in R
  - Problem: Accuracy of PoS–tagging not yet evaluated
- Split spoken data data into words
- Removing stop words (non-lexical function words)
- Apply Sentiment Analysis (determine emotional value of adjectives)
- Add speaker information (age, sex, etc.) (Kallen and Kirk 2008).
## Data

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Speakers</th>
<th>Words</th>
<th>Anger</th>
<th>Anticipation</th>
<th>Disgust</th>
<th>Fear</th>
<th>Joy</th>
<th>Sadness</th>
<th>Surprise</th>
<th>Trust</th>
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<td>151</td>
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<td>294</td>
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<td>16,608</td>
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<td>566</td>
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<td>Total</td>
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<td>3,813</td>
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Statistical analysis

Mixed effects binomial logistic regression
(step-wise step-up fitted)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale</th>
<th>Levels</th>
<th>Description</th>
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</thead>
<tbody>
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<td>txtspk</td>
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<td>S1A-001A : S1B – 080P adj (adjective); nnp (noun); vbf (verb); other</td>
<td>Individual speaker</td>
</tr>
<tr>
<td>pos</td>
<td>categorical</td>
<td>Part-of-speech</td>
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<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale</th>
<th>Levels</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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<td>same; mixed</td>
<td>Same- or mixed-sex conversation</td>
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<tr>
<td>pripub</td>
<td>nominal</td>
<td>private; public</td>
<td>Conversation setting</td>
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<tr>
<td>ints</td>
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<td>1, 2-3, 4-5, 6+</td>
<td>Audience size</td>
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<tr>
<td>pos</td>
<td>categorical</td>
<td>adj (adjective); nnp (noun); vbf (verb); other</td>
<td>Part-of-speech</td>
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</table>
Statistical analysis

Mixed effects binomial logistic regression
(step-wise step-up fitted)

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>emosum nominal 0;1 Word is associated with at least one basic emotion</td>
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<tr>
<td>anger nominal 0;1 Word is associated with anger</td>
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<tr>
<td>anticipation nominal 0;1 Word is associated with anticipation</td>
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<tr>
<td>disgust nominal 0;1 Word is associated with disgust</td>
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<tr>
<td>fear nominal 0;1 Word is associated with fear</td>
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<tr>
<td>joy nominal 0;1 Word is associated with joy</td>
<td></td>
</tr>
<tr>
<td>sadness nominal 0;1 Word is associated with sadness</td>
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<tr>
<td>surprise nominal 0;1 Word is associated with surprise</td>
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<tr>
<td>trust nominal 0;1 Word is associated with trust</td>
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RESULTS

(stat. sig.)
Emotives in Irish English

Results

[Graph showing emotionality by part-of-speech (adj, nnp, oth, vbf)]

[Graph showing emotionality by conversation setting (private, public)]

[Graph showing emotionality by gender (female, male)]
Emotives in Irish English

Results

Fear

Fear

Fear

Part-of-speech

Number of interlocutors

Conversation setting
Emotives in Irish English

Results

Joy

% 0.0 2.5 5.0 7.5 10.0
private public

Conversation setting

Joy

% 0.0 2.5 5.0 7.5 10.0
female male

Sex
Emotives in Irish English

Results

Sadness

Sadness

Part-of-speech

Gender

female

male

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Emotives in Irish English

Results

![Graph 1: Trust vs. Part-of-Speech](image1)

- **Part-of-Speech**: adj, npn, oth, vbf

![Graph 2: Trust vs. Conversation Setting](image2)

- **Conversation Setting**: private, public

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## Overview

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Emosum</th>
<th>Anger</th>
<th>Anticipation</th>
<th>Disgust</th>
<th>Fear</th>
<th>Joy</th>
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</tbody>
</table>
Findings

- Adjectives, in particular, and nouns used to express emotionality
- Men use more emotives compared with women (contrary to $H_A$)
- People use more emotives in public settings
- Previous research substantiated
  - Boys express anger more readily than girls (Brody 1984) → Men use more anger emotives ($H_C$ substantiated)
- Findings at odds with previous research
  - Women express sadness more readily than men (Goodwin et al. 2012) → Men use more sadness emotives
Findings

- Women use more joy-emotives while men use more anger- and sadness-emotives ($H_B$ and $H_C$ substantiated)
- Speakers use more trust emotives in same-gender conversations regardless of sex
- The older speakers become, the more trust emotives they use
- While overall emotionality is associated with public rather than private settings, surprise emotives are used more in private settings
- No significant interactions \( (\text{contrary to } H_D) \)
Discussion

Problems

- Sentiment analysis very coarse-grained
- Focus on lexemes while ignoring/neglecting...
  - Negation
  - Context
  - Fixed expressions

Advantages

- Results and studies are replicable
- It works on large scale data sets

Still, one of the first applications of sentiment analysis to an investigation of social stratification of linguistic phenomena.
Thanks 😊😊

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