DEVELOPING A CORPUS ANNOTATED FOR SOCIAL ACTS IN MULTILINGUAL ONLINE DISCOURSE: OVERVIEW AND LESSONS LEARNED

LING 580: Computational Methods in Linguistics
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04/30/12
Our Project

- Funded by the Intelligence Advanced Research Projects Activity (IARPA) Socio-cultural Content in Language (SCIL) Program

According to the SCIL Broad Agency Announcement (BAA), the goals of the SCIL Program are:

1) to use existing social science theories to **identify** the **social goals** of a group and its members

2) to **correlate these social goals with** the **language** used by the members

3) to **automate this correlation**

4) to provide insight into and evidence for the nature and status of the group and the **roles and relationships** of its members

5) to attempt to **generalize the behaviors across cultures** to highlight the contrasts and similarities in accomplishing social goals
Our Team

UW Faculty:
• Mari Ostendorf (EE), Principal Investigator
• Emily Bender (Linguistics)
• Mark Zachry (HCDE)

UW Graduate Students:
• Brian Hutchinson, Bin Zhang, Alex Marin, Wei Wu, Anna Margolis (EE)
• Meghan Oxley, Liyi Zhu, Varya Gracheva (Linguistics)
• Jonathan Morgan (HCDE)
Our Data

• 3 Languages: English, Mandarin, Russian

• 2 Genres
  • Wikipedia Talk Pages (Wikipedia data dump, 2008)
    • 185 discussions annotated (and re-annotated) in English, 225 in Mandarin, 122 in Russian
    • Goal: Collaboratively edit Wikipedia articles
  • Internet Relay Chat (IRC) Transcripts (collected at UW, 2010-2011)
    • 4 45-minute exchanges between 4 participants for each language
    • Each participant randomly assigned 1 of 4 roles: project manager, publicity coordinator, accountant, secretary
    • Goal: Collaboratively plan a school event
William Labov is an American linguist, widely regarded as the founder of the discipline of variationist sociolinguistics. He has been described as an enormously original and influential figure who has created much of the methodology of sociolinguistics. He is employed as a professor in the linguistics department of the University of Pennsylvania, and pursues research in sociolinguistics, language change, and dialectology.

Biography

Born in Rutherford, New Jersey, he studied at Harvard (1948) and worked as an industrial chemist (1949–61) before turning to linguistics. For his MA thesis (1963) he completed a study of change in the dialect of Martha's Vineyard, which was presented before the Linguistic Society of America. Labov took his PhD (1964) at Columbia University studying under Uriel Weinreich. He taught at Columbia (1964–70) before becoming a professor of linguistics at the University of Pennsylvania (1971), and then became director of the university's Linguistics Laboratory (1977).

He has been married to fellow sociolinguist Gillian Sankoff since 1993. Prior to his marriage to Sankoff, he was married to sociologist Teresa Gnasso Labov.
Talk: William Labov

Weasel words?

"He is widely regarded as the founder of the discipline of variationist sociolinguistics..." 86.132.138.57 03:56, 13 June 2007 (UTC)

A Google search will confirm that he is "widely" regarded as the founder of sociolinguistics; see e.g. [1] (under Nov 08, 2006); [2] (bottom of page); [3] [4] (under 2.1); [5] (in sidebar). But I take your point. How would you recommend rewriting it? AJD 13:07, 14 June 2007 (UTC)

"Influential reliable source X has described him as the founder of sociolinguistics." —Angr 15:21, 14 June 2007 (UTC)

Thing is, I'm not sure what counts as an "influential reliable source" on the question of whether Labov is the founder of sociolinguistics. In a case like this, it seems to me more telling that a wide variety of unrelated sources have given him that description more than any one particular "influential" source does. What kind of source would you recommend looking for? AJD 16:50, 14 June 2007 (UTC)

Well, "influential" is debatable, but certainly a reliable source from someone who actually knows something about linguistics (i.e. not a newspaper reporter) and who is neither Labov himself nor one of his students. One example could be A Student's Dictionary of Language and Linguistics by the late R. L. Trask (a well known syntactician of Basque), where it is said that Labov is "an enormously original and influential figure who has created much of the methodology of the discipline of sociolinguistics". You could also look in books on the history of linguistics as well as sociolinguistics textbooks, but those tend to follow the principle of show, don't tell in that they show his importance by constantly referring to him and discussing his findings rather than saying in so many words "if it weren't for him, sociolinguistics as we know it
Chat Excerpt

Secretary: We should announce the event earlier than that
Accountant: no, the Monday before
Secretary: First announce on Monday, signup sheet on Thursday?
PublicityCoordinator: I like secretary’s idea
Accountant: yeah, I think that’s a great idea secretary
PublicityCoordinator: let’s do that
Secretary: Great
Accountant: yay, agreement!
ProjectManager: :D
ProjectManager: What else?
Secretary: Further activities?
Accountant: I have an idea of how to split people up
ProjectManager: How?
PublicityCoordinator: Based on gender?
PublicityCoordinator: j/k
ProjectManager: Lol, no. This isn’t Texas.
Social Acts

- “Social acts concern not the form nor the linguistic meaning of utterances but what those utterances are used to accomplish” (Morgan et al. 2012)

- Not annotating the language itself (linguistic structure), but what people do with language (social acts)
- Particular structural features might be correlated with some of our social acts (Marin et al. 2010), but our social acts aren’t detected based on structural features alone
Our Social Acts: Claims of Authority

- What is an “authority claim”? 
  - A statement intended to bolster an interlocutor’s credibility 
  - Basis for an “argument from authority” – you should believe me more than someone else because . . . , you should do what I say because . . . 
  - Frequency and distribution of particular claim types varies by genre, topic (Richardson 2003, Maciewicz 2010, Shanahan 2010, Oxley et al. 2010)
# Our Social Acts: Claims of Authority

<table>
<thead>
<tr>
<th>Claim Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credentials*</td>
<td>Reference to <strong>education</strong>, <strong>training</strong>, or a history of <strong>work</strong> in an area</td>
</tr>
<tr>
<td></td>
<td>Ex: “Speaking as a professional writer . . .”</td>
</tr>
<tr>
<td>Institutional*</td>
<td>Based on an individual’s <strong>position within an organization structure</strong> that governs the current discussion forum or has power to affect the topic or direction of the discussion</td>
</tr>
<tr>
<td></td>
<td>Ex: “As an admin, I can tell you that . . .“</td>
</tr>
</tbody>
</table>

*Institutional claims were not attested in our corpus and credentials claims were rare.
## Our Social Acts: Claims of Authority

<table>
<thead>
<tr>
<th>Claim Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forum</td>
<td>Based on <strong>policy</strong>, <strong>norms</strong>, or contextual <strong>rules of behavior</strong> in the interaction</td>
</tr>
<tr>
<td></td>
<td>Ex: “According to [[WP:BLP]]*, categories such as ‘Jewish American Lawyers’ should only be included if ‘the subject's beliefs are relevant to the subject's notable activities or public life.’”</td>
</tr>
<tr>
<td>External</td>
<td>Based on an outside source of expertise, such as a <strong>book</strong>, <strong>magazine article</strong>, <strong>website</strong>, <strong>written law</strong>, <strong>press release</strong>, or <strong>court decision</strong></td>
</tr>
<tr>
<td></td>
<td>Ex: “According to the National Hurricane Center [<a href="http://www.nhc.noaa.gov/">http://www.nhc.noaa.gov/</a>] . . .”</td>
</tr>
</tbody>
</table>

*WP:BLP refers to Wikipedia’s policy on Biographies of Living Persons.*
### Our Social Acts: Claims of Authority

<table>
<thead>
<tr>
<th>Claim Type</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social expectations</td>
<td>Based on the intentions or expectations (thoughts, feelings, or beliefs) of groups outside the current conversation.</td>
<td>“Most American and British citizens agree that the events in that video constitute war crimes.”</td>
</tr>
<tr>
<td>Experiential</td>
<td>Based on an individual’s involvement in or witnessing of an event</td>
<td>“I was in the invasion in 2003, and I remember . . .”</td>
</tr>
</tbody>
</table>
Our Social Acts: Alignment Moves

- What are “alignment” moves?
  - Social moves that interlocutors make to align with or against other participants in a discussion
  - Function to enhance solidarity or increase social distance between participants (Svennevig 1999)
  - Expressions of alignment vary according to power relations between participants, language, context, and genre (Rees-Miller 2000, Chang 2009, Baym 1996)
# Our Social Acts: Alignment

## Positive Alignment

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Praise/Thanking</td>
<td>“Great idea.” “Good point.” “Nice work!”</td>
</tr>
<tr>
<td>Positive Reference to Another Participant’s Point</td>
<td>“Like you said before . . .” “As Joe suggested . . .”</td>
</tr>
</tbody>
</table>

## Negative Alignment

<table>
<thead>
<tr>
<th>Explicit Disagreement</th>
<th>“I disagree.” “That’s wrong.” “That’s false.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doubting</td>
<td>“I doubt that.” “I don’t think so.”</td>
</tr>
<tr>
<td>Sarcastic Praise</td>
<td>“Great idea – why not destroy the whole article while you’re at it?”</td>
</tr>
<tr>
<td>Criticism/Insult</td>
<td>“That’s ridiculous.” “That’s an idiotic suggestion.”</td>
</tr>
</tbody>
</table>
Previous Approaches

- Previous research on social acts not often large scale annotation projects – no official guidelines, only one researcher/annotator (so no calculation of interannotator agreement), and small resulting datasets

- Data not available for download, so difficult to determine how well previous researchers’ categories map onto ours (though the MRDA corpus is an exception)

- Previous work generally focused on one genre/one language
Annotation

• Teams of 3-4 native speaker annotators per language plus 1-2 native speaker researchers to oversee each language’s annotation (all UW Seattle students)

• Files cleaned up (some markup removed), segmented at the turn level, and converted to .xtdf (tab delimited) format

• Annotated in modified version of LDC tool Xtrans
A turn (i.e., a post on Wikipedia)

Select grey box titled “alignment1”

Participant who produced this turn

Color coded list of participants
Annotation Tool: Xtrans

Step 3 of 4: Select one or more speakers who are the alignment targets of the current speaker.

- 211.30.92.84
- Al
- Humus sapiens
- Jayjg
- Miborovsky
- Mikkalai
- Sam Spade
- group
- uncertain
Argument is provided why it should not be included. :::I think [[user:211.30.92.84]] is probably right. Propaganda on posters is usually so simple that EVERYONE can understand it without thinking too much (at least that's what Hitler defined it). The fact that anti-semitism has also a negative effect on non-Jewish people is not straightforward to all the people, and the poster doesn't explain it either. If it were straightforward to all the people, there wouldn't be any need for such a poster. And just because a little boy claims anti-semitism is also against non-Jewish people doesn't mean the anti-semitic people are to stop being hateful.

Step 4 of 4: select one or more alignment reason tags to support the alignment move of this segment.
Annotation Process

- Initial categories developed through qualitative analysis of contentious discussions on English Wikipedia talk pages
- Researchers annotated a small sample using these categories, then drafted guidelines
- Annotators tested guidelines over larger sample and raised questions/comments in weekly annotation meetings and over an annotation mailing list
- When enough files had been annotated, calculated interannotator agreement (Cohen’s Kappa)
- Based on interannotator agreement results, conducted focused error analysis targeting points of greatest disagreement
- Interannotator agreement results and annotator feedback motivated guideline revisions
Annotation Process

- Develop guidelines
- Annotation pass
- Measure inter-annotator agreement
- Error/disagreement analysis
- Feedback from annotators
Experiential: Use experiential when the claim is based on an individual’s involvement in or witnessing of an event.
# Iterations of One Annotation Category

## Authority Guidelines Version 2 (02/2010)

**Experiential:** Use experiential when the claim is based on an individual’s involvement in or witnessing of an event. The speaker must explicitly refer to something that they personally experienced, such as an activity they took part in.

<table>
<thead>
<tr>
<th>General Examples</th>
<th>When to Use</th>
<th>When Not to Use</th>
<th>Examples of when to code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wikipedia Example. “I’ve been monitoring this page for six months and I think we’ve already answered that question.”</td>
<td>Use when the speaker makes an explicit reference to knowledge and/or events that they have personally experienced in the past (such as by witnessing an accident or taking part in a meeting) as a basis for an authority claim.</td>
<td>Do not use when the speaker makes reference to knowledge and/or actions that was not or could not have been experienced directly.</td>
<td>Example 1 (do not code). &quot;The collapse of the Twin Towers was a huge deal in New York for months after September 11th.&quot;</td>
</tr>
<tr>
<td>Broadcast Example. “I knew her when she was a councilwoman and I can honestly say she’s always been a hard worker.”</td>
<td></td>
<td></td>
<td>Example 2 (code). &quot;I lived in New York City after 9/11, and the collapse of the Twin Towers was a huge deal for months after September 11th.&quot;</td>
</tr>
</tbody>
</table>
**Experiential:** Use *experiential* when the claim is based on an individual’s involvement in or witnessing of an event. The speaker must explicitly refer to something that they personally experienced, such as an activity they took part in.

- **Experiential claims must** involve first person pronouns such as ‘I,’ ‘me,’ or ‘we,’ for example, “I have been watching this page for a while and we’ve had this debate many times before.”
**Experiential:** Use *experiential* when the claim is based on an individual’s involvement in or witnessing of an event. The speaker must explicitly refer to something that they personally experienced, such as an activity they took part in.

- Experiential claims **must** involve first person pronouns such as ‘I,’ ‘me,’ ‘my,’ or ‘we,’ for example, “I have been watching this page for a while and we’ve had this debate many times before.”
- Claims such as “I’ve never seen credible evidence for evolution” are not explicit enough to be counted as experiential claims.
- However, claims such as “I’ve read up on biology and I’ve never seen credible evidence for evolution” should be coded as experiential claims.
Annotation Challenges

• Time constraints
  • Annotation takes much, much longer than you think it will
  • Length of Wikipedia discussions varies greatly
  • Data must be reannotated after guideline updates
  • To enable reliability checks, most of our data was dual-annotated, resulting in less data overall than single annotation

• “Messy” data
  • Wikipedia data: Wiki markup, misattributed turns, duplicated turns, language-specific formatting differences
  • Chat data: difficult to detect the target of a move when several individuals are posting simultaneously
Annotation Challenges

• Frequent changes in annotation staff
  • Annotation is tedious work, and changes in guidelines require reannotation of the same discussions over . . . and over . . . and over again
  • Training annotators takes time, and reaching acceptable levels of agreement between annotators requires consistency/stability

• Tension between desire for brief guidelines and sufficient detail to improve agreement
  • Initial authority claim guidelines (Version 0, 11/2009): 2.5 pages
  • Final authority claim guidelines (Version 8, 01/2011): 8 pages
  • By comparison, the MRDA guidelines are: >100 pages
  • Even after guideline updates and several rounds of annotation, rarely achieved Cohen’s Kappa > 0.6
Lessons Learned

• Expect annotation of social acts to involve unique challenges which may differ from those encountered in annotation of linguistic structure

• Make your data and guidelines available for other researchers studying similar phenomena (Bender et al. 2011)
  • https://ssli.ee.washington.edu/projects/SCIL.html

• Provide annotators with specific criteria for annotation, and include both positive and negative examples (MacQueen 1998’s “inclusion” and “exclusion” criteria)

• Perform regular spot checks on annotation to identify both low-level and high-level disagreement

• Treat guideline development and annotation as iterative processes
References


References


What Kinds of Questions Can We Ask with This Data?

• Do editors of different user types (registered, unregistered, admin) exhibit different frequencies or distributions of authority claims?
• Do veterans make more authority claims than newbies or infrequent editors?
• Do the types/forms/frequencies of authority claims and alignment moves differ by genre/language?
• Do authority claims and alignment moves interact (i.e., does the presence of an authority claim in one turn increase the likelihood of an alignment move in the next)?