(Asymmetric) language adaptation

Quick notes about the readings for next time, and today's lecture:

- the goal now in this part of the course is to find inspiration for case projects

Think about:

- what are interesting related problems?
- or-
- what are interesting could else could be done w/ the datasets?
- or-
- what would some interesting related datasets be?
- or-
- what else could be done w/ the techniques?
- or-
- what else could be done to the techniques?

You are not reviewing these papers!

For your "proposal" assignments, this should be more focused:

budget about ~1.5 hr 1st pass.
(don't forget you actually need to read one paper, write a proposal)

Q: pick two people for next "proposing"

Jean, Maithre.

If you want to then go back over the paper,

what did you like about how they analyzed?

This week, exempt them from next Tuesday's need to schedule sign-ups.
Asymmetric language synchronization in social interaction

People tend to adopt the behaviors of their interlocutors...
...but participants can entrain to different degrees.

Asymmetric conversational synchrony can tell us a lot about user relationships.

Conversational synchrony

People tend to adopt the behaviors of their interlocutors.
[Giles et al. ‘91, Chartrand & Bargh ‘99, inter alia]

<table>
<thead>
<tr>
<th>Non-verbal</th>
<th>Posture</th>
<th>[Condon and Ogston ‘67]</th>
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<tbody>
<tr>
<td>Nodding</td>
<td>[Hale and Burgoon ‘84]</td>
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<tr>
<td>“Non-semantic”</td>
<td>Pause length</td>
<td>[Jaffe and Feldstein ‘70]</td>
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<td></td>
<td>Backchannels</td>
<td>[White ‘84]</td>
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<tr>
<td>Language content</td>
<td>Words, esp. referring expressions</td>
<td>[Brennan and Clark ‘96, Ninio and others ‘98, Stoyanchev and Sterne ‘08]</td>
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<tr>
<td></td>
<td>Word classes</td>
<td>[Vorderer and Pennebaker ‘02]</td>
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<td>Degree of self-disclosure</td>
<td>[Darling and others ‘73]</td>
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Note the dates: lots of prior work has been in small-scale lab settings.

Preview of Part I:
Pairwise adaptation and power

Who’s in charge?

Isn’t all this obvious?

Paraphrasing Stuart Shieber:
Your goal is not to convince your audience that you are brilliant, but that your solution is trivial.
It takes a certain strength of character to take that as one’s goal.
But if people think your findings are obvious, they must also believe that you are correct.

Discussion of how to present things as "clear" while making them seem "trivial".

Make people aware of the counterintuitive answer.
Ask a question, split the crowd, get an answer.

Answer can’t have been obvious.
In class, we talked about strategies for presenting things in a way to make them "obvious" without having your audience think the work is trivial:

* make your audience aware of the counter-hypotheses

* ask your audience what they think the outcome will be; for an interesting question, the audience should be divided, which "proves" that the eventual answer can't be obvious.

* admit that there are easy/obvious cases, but also show harder ones.

**Language reveals power: "easy" cases**

- Your Honor, I agree.
- I'd love to get your thoughts on this when you are available.
- Thank you.
- Let's discuss later.

- [Image of conversation]

**What about general (domain-independent) signals?**

Here we talked about why so much work on Error - the allure of annotated data (here, the org chart)

**Why word classes instead of words?**

- Function-class matching: unconscious & frequent

- [Image of function-class matching]

- In contrast, direct repetition is under the speaker's control, and could just be choice of topic.

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**Echoes of Power:**

Language effects & power differences in social interaction

Cristian Danescu-Niculescu-Mizil, Liilien Lee, Bo Pang, & Jon Kleinberg

WIIW 2012

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**Who has the (conversational) lead?**

Communicative behaviors are "patterned and coordinated, like a dance" (Goffman and Turner 2002)

- [Image of conversational lead]

**Function-class matching: unconscious & frequent**

(Niederhoffer and Pennelacker 2002)
Measuring immediate influence

How much does speaker \( x_i \) immediately trigger \( x_j \)'s use of function-word class \( e \)?

\[
Pr(x_2 \text{ uses } c \mid x_1 \text{ uses } c, x_1 \text{ immediately replies})
\]

not always available for small data settings.

Getting a more immediate measure will be cool.

But correlation itself isn’t good enough to show influence.

Status in US Supreme Court transcripts

Status change in Wikipedia

50,000 exchanges + metadata (download from my webpage)

240,000 exchanges + metadata (download from my webpage)

Evidence of domain independence

SVM classification with various features

No country for old members:

User lifecycle & linguistic change in online communities

Discussion of fact that this is a long-lasting community of very active members, and probably more of a "true" community compared to, e.g., Amazon workers.
**Hypothesis:** A user starts out of sync, then synchronizes

![Graph showing distance from grouplang that month](image)

Post at jth percent of all reviews posted

**Actual lifecycle pattern**

![Graph showing distance from group lang that month](image)

Can noticing this trough help predict abandonment of the group?

Post at nth percent of all reviews posted

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**Predicting imminent exit**

- Activity baseline
- Similarity to community
- Language stability
- Adoption of innovations
- [I, me, my, ...]
- Number of words

![Graph showing F1 scores](image)

Language gives 12 point absolute (40% relative) improvement; synchronization is the lion's share.