The Effect of Informational and Interactive Factors on the Prosodic Prominence of Negation

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Multivariate analysis: Panagi Pappas (SFU), Tagliamonte (2006)

LSA: Prosodic Prominence on Negation 1

Previous Findings

• Cognitive Prominence Principle:
  – Negation will be stressed due to importance in message.
  – In read speech, negation tends to be prominent. (O'Shaughnessy & Allen 1983, Hirschberg 1993).

• Social Agreement Principle (Yaeger-Dror, 1985, 2003):
  – In friendly conversation, speakers strive to minimize disagreement to mitigate threats to the addressee's face; in adversarial situations, this principle is inverted.
  – Switchboard corpus: 16.8% prominent.
  – CallHome corpus (Banauzzi 2003): 19% prominent.
  – Presidential debates: 52% prominent.
  – Television political discussions: McLaughlin group (Hedberg & Sosa 2003); 75% prominent.

• Information Status (Banauzzi 2003)
  – CallHome Corpus: Speakers stress negations that fill an Open Proposition (Prince 1988).

LSA: Prosodic Prominence on Negation 3

Data Considered

• Spoken discourse
  – Telephone conversations (Switchboard, CallHome),
  – presidential debates ( Nixon/Kennedy, Bush/Gore),
  – television political discussion programs (McLaughlin Group)

• Declarative statements
  – Disregarded questions and commands.

• Only Not-negatives (Tottie 1991)
  – Disregarded no-negatives (no one, nothing, etc.),
  – Disregarding affixal negation (unfriendly, etc.), and constituent negation (He went to the store, not to the bar).

• Coded presence or absence of pitch accent on independent not or on auxiliary with contracted negation
  – They did not come.
  – They didn't come.

LSA: Prosodic Prominence on Negation 2

Goals of Current Study

• Use multivariate analysis (Goldvarb) to compare role of stance, footing and information status on the prosodic prominence of negation.

• Stance:
  – McLaughlin Group (adversarial, informal)
  – First issue in 13 programs, introductions not analyzed, 27,829 words.
  – CallFriend Corpus* (friendly, informal)
  – Debate broadcasts* (adversarial, formal)
  – News broadcasts* (informative, formal)

*Analysis not completed

LSA: Prosodic Prominence on Negation 4

Dependent Variable: Pitch Accent

• Pitch accent on negative element (Hedberg, Sosa, Görgülü; Yaeger-Dror et al)
  – N Neutral
  – H High
  – R Rising
  – F Falling
  – L Low
  – v Fall-rise

• Recoding for Goldvarb:
  – Non-prominent: N, L
  – Prominent: H, R, F, v

LSA: Prosodic Prominence on Negation 5

Independent Variable: Footing

S. Supportive

• Mr. Blanksley: I agree with you that he's most popular on the Hill. (0/17/07, 12, 09R)

R. Remedial

• Mr. McLaughlin: We're talking about bombing of civic officials.
  – Mr. Zuckerman: No, it's not bombing. (10/12/07, 30, BRR)

I. Informative

• Mr. Cline: And they can't control all of these factors that are producing toxic waste nearly.
  – Mr. McLaughlin: (10/12/07, 1, INR)

H. Hedge

• Mr. McLaughlin: Question: Should Ronnie Mae and Freddie Mae be expected to take up the slack? [Pet Buchanan]
  – Mr. Buchanan: No, I don't think they should ride right now. John (8/30/07, 1, RRR)

LSA: Prosodic Prominence on Negation 6
Independent Variable: Information Status

- **N. New**
  - Mr. Buchanan: We haven't had a nuclear power plant since Three Mile Island. (6/3/07, A31N)
- **P. Presupposed**
  - Ms. Barmore: As I mentioned earlier, it's not just China. (6/3/07, 20, IPI)
- **D. Direct answer**
  - Mr. Blankley: No embedded message in those terms? Ms. Blankley: No embedded message. It was obvious. The man had a genuine, sincere emotion, as anybody would. But it doesn't mean anything about policy. (7/2/07, 18, R29)
- **O. Open Proposition**
  - Ms. Blankley: No the fact that we have done a lot doesn't mean that we are any safer. (7/15/07, K, D01)

Stance: Distribution of Footing

<table>
<thead>
<tr>
<th>% Neg/100 words</th>
<th>SwB</th>
<th>McL</th>
<th>B/G</th>
<th>K/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informative</td>
<td>.296</td>
<td>.478</td>
<td>.382</td>
<td>.400</td>
</tr>
<tr>
<td>Remedial</td>
<td>.091</td>
<td>.392</td>
<td>.457</td>
<td>.536</td>
</tr>
<tr>
<td>Supportive</td>
<td>.255</td>
<td>.144</td>
<td>.011</td>
<td>.048</td>
</tr>
<tr>
<td>Hedge</td>
<td>.172</td>
<td>.129</td>
<td>.019</td>
<td>.007</td>
</tr>
</tbody>
</table>

McLaughlin intermediate between Switchboard and debates with respect to proportion of Remedial and Supportive negative turns.

Stance: Pitch Prominence on Different Footings

<table>
<thead>
<tr>
<th>Corpus</th>
<th>Footing</th>
<th>N</th>
<th>% PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SwB</td>
<td>Informative</td>
<td>148</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>Remedial</td>
<td>45</td>
<td>13.3</td>
</tr>
<tr>
<td>CallHome</td>
<td>Informative</td>
<td>282</td>
<td>19.2</td>
</tr>
<tr>
<td></td>
<td>Remedial</td>
<td>11</td>
<td>45.9</td>
</tr>
<tr>
<td>B/G</td>
<td>Informative</td>
<td>102</td>
<td>40.2</td>
</tr>
<tr>
<td></td>
<td>Remedial</td>
<td>122</td>
<td>41.5</td>
</tr>
<tr>
<td>K/N</td>
<td>Informative</td>
<td>169</td>
<td>54.6</td>
</tr>
<tr>
<td></td>
<td>Remedial</td>
<td>223</td>
<td>61.1</td>
</tr>
<tr>
<td>McL</td>
<td>Informative</td>
<td>133</td>
<td>74.4</td>
</tr>
<tr>
<td></td>
<td>Remedial</td>
<td>109</td>
<td>80.7</td>
</tr>
</tbody>
</table>

Stance & Pitch Prominence: Interpreted

- **Switchboard**: friendly, formal
  - Social Agreement Principle at work.
- **CallHome**: friendly, informal
- **Debates**: adversarial, formal
  - Social Agreement Principle inverted.
- **McLaughlin**: adversarial but friendly, informal
  - Social Agreement Principle inverted + suspended.

Information Status & Pitch Prominence

<table>
<thead>
<tr>
<th>O+D (OP)</th>
<th>P (Old)</th>
<th>N (New)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CallHome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>Total N</td>
<td>43</td>
<td>54</td>
</tr>
<tr>
<td>Percent PP</td>
<td>72.1</td>
<td>24.1</td>
</tr>
<tr>
<td>McLaughlin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>129</td>
<td>40</td>
</tr>
<tr>
<td>Total N</td>
<td>178</td>
<td>49</td>
</tr>
<tr>
<td>Percent PP</td>
<td>72.5</td>
<td>81.6</td>
</tr>
</tbody>
</table>

Goldvarb: Footing

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>N</td>
<td>99</td>
<td>34</td>
<td>133</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>74.4</td>
<td>25.6</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>N</td>
<td>35</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>87.5</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>N</td>
<td>80</td>
<td>21</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>62.7</td>
<td>37.3</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>N</td>
<td>17</td>
<td>19</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>47.2</td>
<td>52.8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>N</td>
<td>179</td>
<td>19</td>
<td>198</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>72.2</td>
<td>24.8</td>
<td></td>
</tr>
</tbody>
</table>
Goldvarb: Footing Interpreted

- I,S,R,H: Footing significant
  - S: 0.695
  - R: 0.577
  - H: 0.216
- I,S,R,<-: Footing nonsignificant
- I,S,R,I: Footing significant
  - S: 0.660
  - R: 0.527
  - I: 0.428

Goldvarb: Information Status Interpreted

- O,N,P,D: Information Status nonsignificant
  - N: 0.572
  - O: 0.472
  - P: 0.503
  - D: 0.425
- O,N,P,O: Information Status nonsignificant

Conclusions

- McLaughlin conversations are adversarial, yet friendly and informal, hence negations come out even more pitch prominent than in Presidential debates.
- Footing is a significant factor group, information status is not.
- Both in McLaughlin and in Debates, Remedial tokens are more likely to be prominent than Informative.
- In McLaughlin, Supportive tokens are more likely to be prominent than even Remedial.
- While in debates, Supportive tokens are least likely to be prominent.

Future Work

- Compare pitch accent coding between teams.
- Extend study to news broadcast, CallFriend conversations and debates.
- Continue to pursue validity and reliability in coding for prosody, footing and information status.
- Examine the role of gender.

References