One fragment where director could not gesture:

E.g. “Nou je pak hem vast” – Well, you hold it.

One fragment where director could and did produce at least one iconic gesture:

E.g. “Oh je [pakt hem] weer hetzelfde vast” - Oh you [hold it] again in the same way. (iconic gesture on bracketed part)

20 Dutch participants, not the same participants as in the tie experiment, listened to the 20 pairs of sound fragments and for each pair answered the following question:

In which of the two sound fragments does the speaker gesture?

Results:

Participants could NOT hear when somebody was gesturing.

Mean of 10.95 correct answers out of 20 trials. Not significantly different from chance level.

(One-sample t(19)= 1.843, p=.08).

The 20 pairs of sound fragments from the perception test were analysed on several acoustic measures:

<table>
<thead>
<tr>
<th>Measure</th>
<th>Gesture (SD)</th>
<th>No Gesture (SD)</th>
<th>Mean total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Pitch</td>
<td>248.5 (85)</td>
<td>251.65 (83.5)</td>
<td>250</td>
</tr>
<tr>
<td>Min Pitch</td>
<td>136.5 (47)</td>
<td>138.75 (60)</td>
<td>137.62</td>
</tr>
<tr>
<td>Mean Pitch</td>
<td>192.5</td>
<td>195.2</td>
<td>193.85</td>
</tr>
<tr>
<td>Mean Pitch range</td>
<td>112.77</td>
<td>112.9 (67)</td>
<td>112.45</td>
</tr>
<tr>
<td>Mean Intensity</td>
<td>55.40 (5.9)</td>
<td>65.85 (6.2)</td>
<td>65.67</td>
</tr>
</tbody>
</table>

In short, can we replicate Dobrogaev’s (1929) finding that speech becomes more monotonous (smaller pitch range) when we cannot gesture.

We found NO perceptual differences between speech with and speech without gesture.

We found NO acoustic differences between speech with and speech without gesture.

Krahmer and Swerts (2007) acoustic effects of beat gestures CANNOT be generalised to iconic gestures.

We could NOT replicate Dobrogaev’s (1929) finding that speech becomes more monotonous (smaller pitch range) when we cannot gesture.

In short, current results suggest that we cannot hear a gesture and that there are no large acoustic effects of gestures on speech.

We have not looked at more detailed aspects, such as pitch of specific words or vowels. These might be effected by the inability to gesture and could still be studied. However, the perception test shows us that these possible differences cannot be perceived by the listener.

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References