

# The Distracted Ear: How Listeners Shape Conversational Dynamics

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# Background



# The Bavelas' Original Study

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- Nature of social communication by studying conversational feedback.
- Focus on one type of interaction: **storytelling**.
- Assumption: the listener **helps** the main speaker by producing different type of reactions:



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  - **Generic:**
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    - Shows understanding.
    - *"Mh mh"*, *"ok"*, nod.



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  - **Generic:**
    - Helps the main speaker in monitoring the listener's comprehension.
    - Shows understanding.
    - "Mh mh", "ok", nod.
  - **Specific:**
    - Helps the main speaker to tell the story.
    - Displays a range of behaviors.
    - Wince, smiling, laughing, head movements, lexicalization...



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# The Bavelas' Original Study - Experiment

## Method

34 dyads

Storytelling task of a close-call or near-miss incident

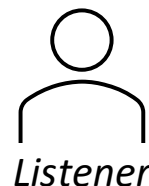
Two conditions:

- **Control** condition
- **Distracted** condition: *t-counting task*

and then the train was late..



1, 2, 3



## Annotations

Generic/specific instances

Third-party analysts watch the videos of the storytellers

→ Evaluate the story endings:

- Pace
- Denouement
- Choppiness
- Narrator's attempt to justify the story's closure



# The Bavelas' Original Study - Results

- ✓ Generic and specific feedback serve different functions.
- ✓ Distraction has a greater impact on the production of specific feedback, as it demands a higher level of comprehension.
- ✓ Storytelling is based on a collaborative process.

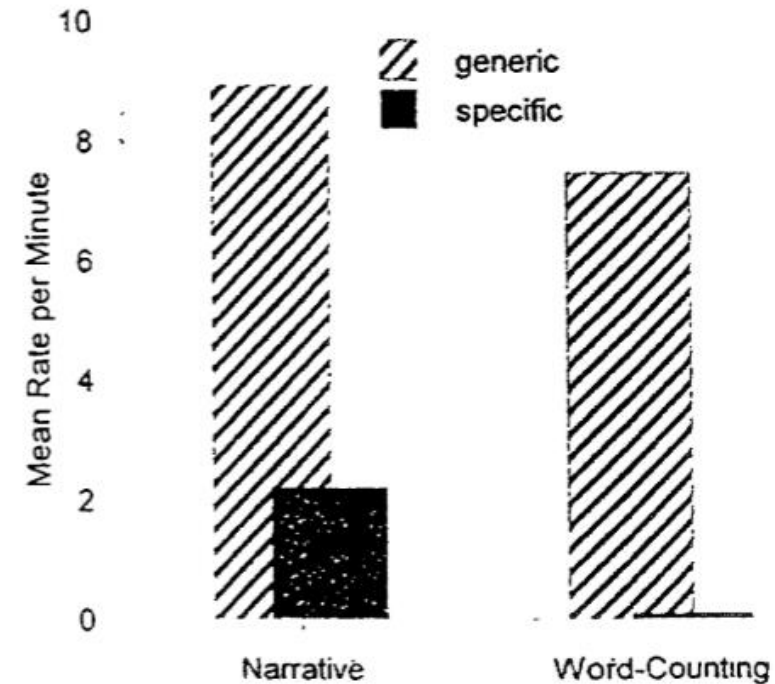


Figure 2. Effect of experimental condition on the rates of generic & specific listener responses in Experiment 2. There were 12 dyads in each condition.

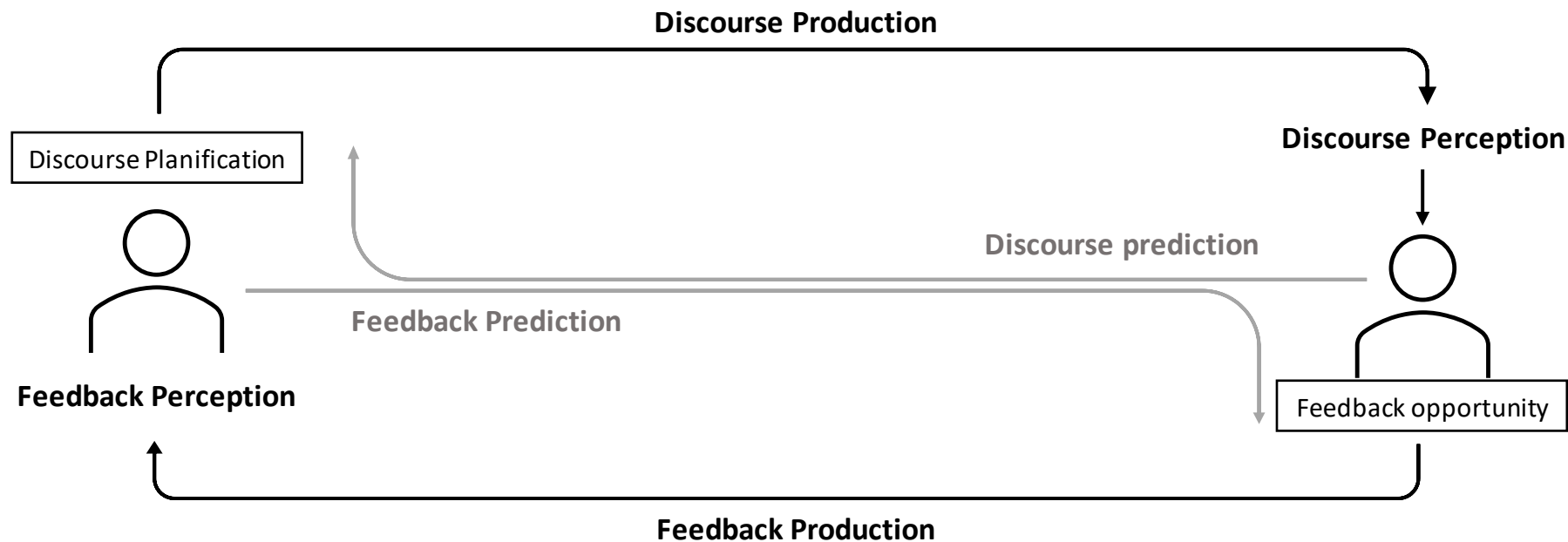
# Our work





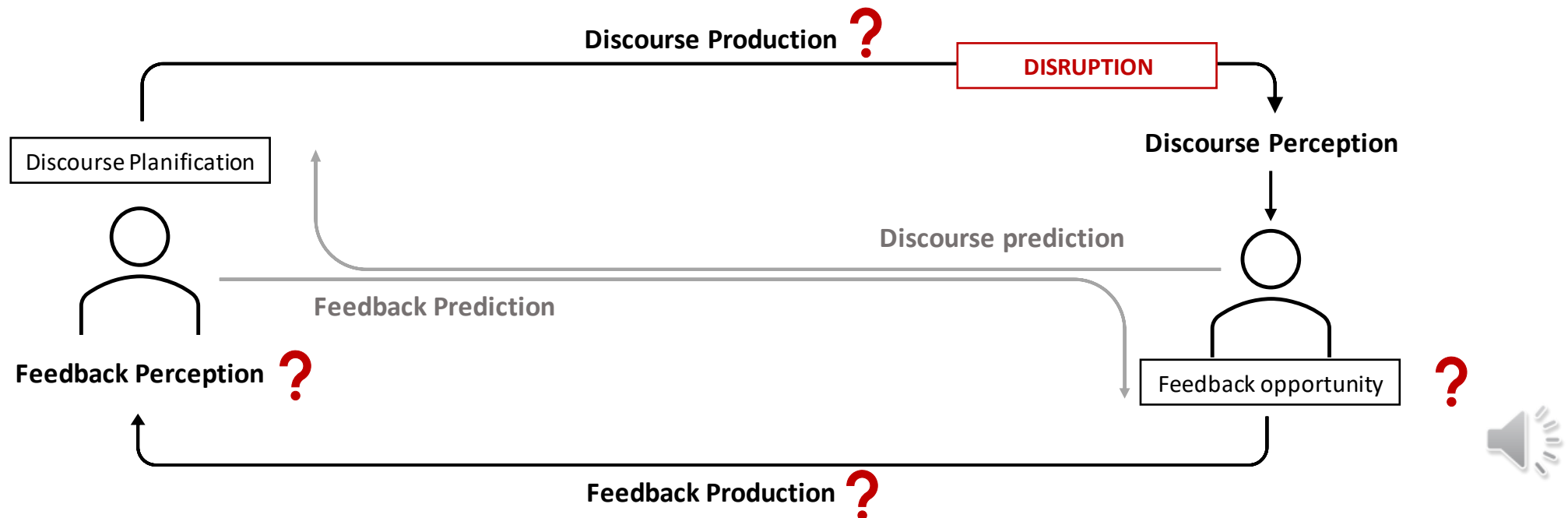
# SMYLE Corpus

- Based on Bavelas study and the well-established distinction between generic and specific feedback (Stivers 2008, Tolins & Fox Tree 2014, Bertrand & Espesser 2017)
- *How variation in the listener's perception of the main speaker's discourse influence various aspects of the conversation?*



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# SMYLE Corpus

Audio-video and neurophysiological corpus (15h)

**30 dyads** enrolled in 2 tasks (~15 minutes per task):

- 1. Storytelling** with 2 conditions (8.2h)
  - 15 dyads with **attentive** listeners
  - 15 dyads with **distracted** listeners  
(*t-counting task*)
- 2. Free conversation** starting with a debriefing (7.8h)



# SMYLE – Our Hypothesis

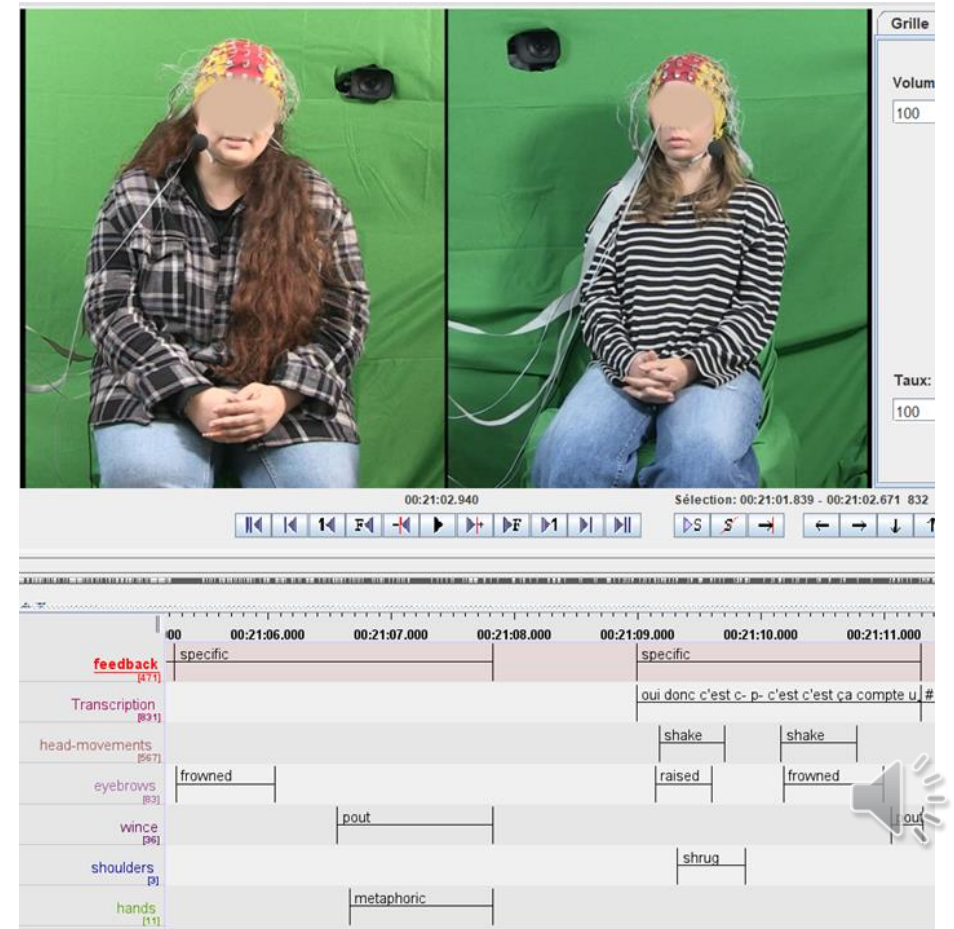
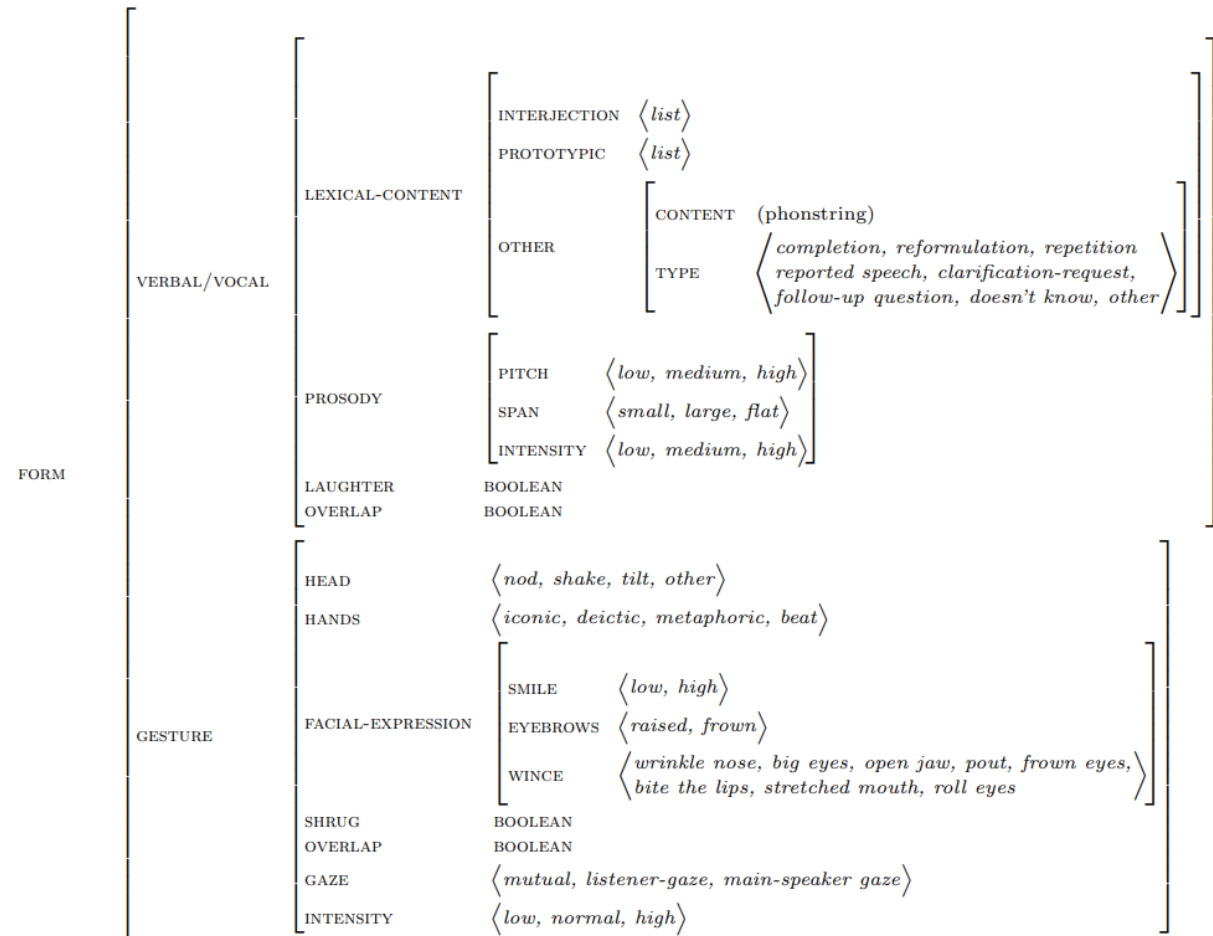
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- **Hypothesis 1:** Similar frequency of generic feedback in both distracted and normal conditions, as in free conversations.
- **Hypothesis 2:** Lower frequency of specific feedback in both distracted and normal conditions, as in free conversations.
- **Hypothesis 3:** We expect that feedback produced by distracted listeners are less elaborate in terms of form, than feedback produced by normal listeners.
- **Hypothesis 4:** Lower quality of the storytelling, as rated by a third party in distracted condition than in normal condition.
- **Hypothesis 5:** We expect a positive correlation between the frequency of specific feedback and the quality of storytelling.



# SMYLE – Feedback Annotations

## Generic/Specific and feedback components



# Results

# Feedback frequency

- ✓ **Hyp 1:** Similar frequency of generic feedback during the storytelling and the free conversation

Condition	Task	Generic Frequency
Distracted	Storytelling	8.76 ± 3.43
	Free conversation	6.59 ± 2.82
Normal	Storytelling	6.59 ± 2.82
	Free conversation	7.31 ± 3.13

No effect (comparing Storytelling vs Free conversation within Distracted condition)

No effect (comparing Storytelling vs Free conversation within Normal condition)

No effect (comparing Distracted vs Normal conditions for both tasks)

*T-test*



1,425 generic feedbacks in **normal** condition

1,851 generic feedbacks in **distracted** condition

# Feedback frequency

✓ **Hyp 2:** Lower frequency of specific during the storytelling than during the free conversation

Condition	Task	Generic Frequency	Specific Frequency	
Distracted	Storytelling	8.76 ± 3.43	<b>2.94 ± 1.4</b>	] Large effect ]
	Free conversation	6.59 ± 2.82	<b>5.51 ± 2.81</b>	
Normal	Storytelling	6.59 ± 2.82	<b>4.24 ± 1.51</b>	] No effect ]
	Free conversation	7.31 ± 3.13	<b>5.43 ± 2.02</b>	

Large effect

*T-test and Cohen's d*

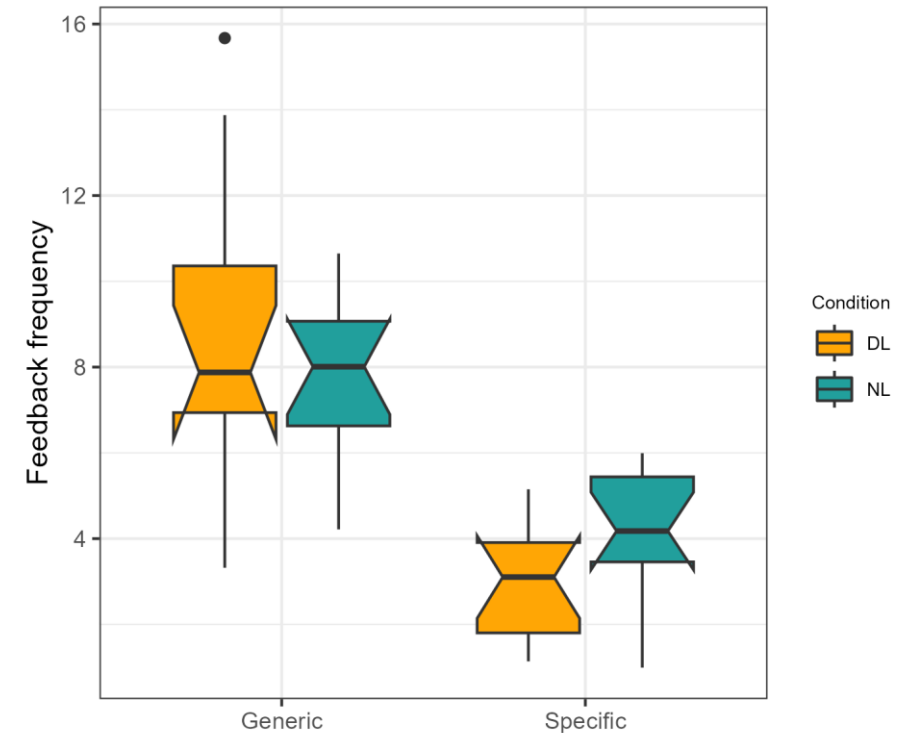


**814 specific** feedback in **normal** condition  
**698 specific** feedback in **distracted** condition



# Feedback frequency

Condition	Task	Generic Frequency	Specific Frequency
Distracted	Storytelling	8.76 ± 3.43	2.94 ± 1.4
	Free conversation	6.59 ± 2.82	5.51 ± 2.81
Normal	Storytelling	6.59 ± 2.82	4.24 ± 1.51
	Free conversation	7.31 ± 3.13	5.43 ± 2.02



- ✓ **Hyp 1: Similar** frequency of **generic** (distracted and normal conditions & in free conversations)
- ✓ **Hyp 2: Lower** frequency of **specific** (distracted and normal conditions & in free conversations)

# Feedback Components

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**Hyp3:** Feedback produced during the distracted condition will be composed of a minimal quantity of components (less rich/complex).

**Components:** individual element annotated within the feedback interval.

**Test:** Wilcoxon-Mann-Whitney test to compare the components quantity.

**Results:**

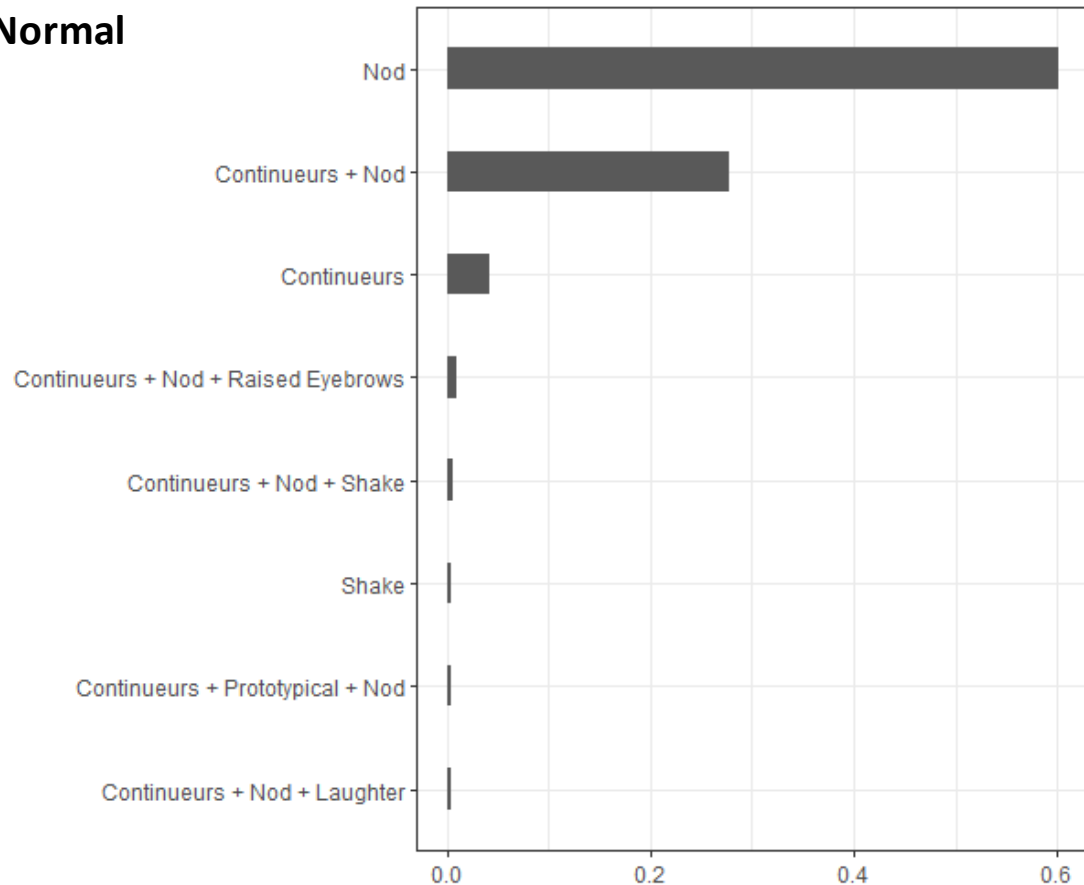
- Significant effect for **generic** feedback ( $p < 0.0001$ ).
- No effect for specific feedback.



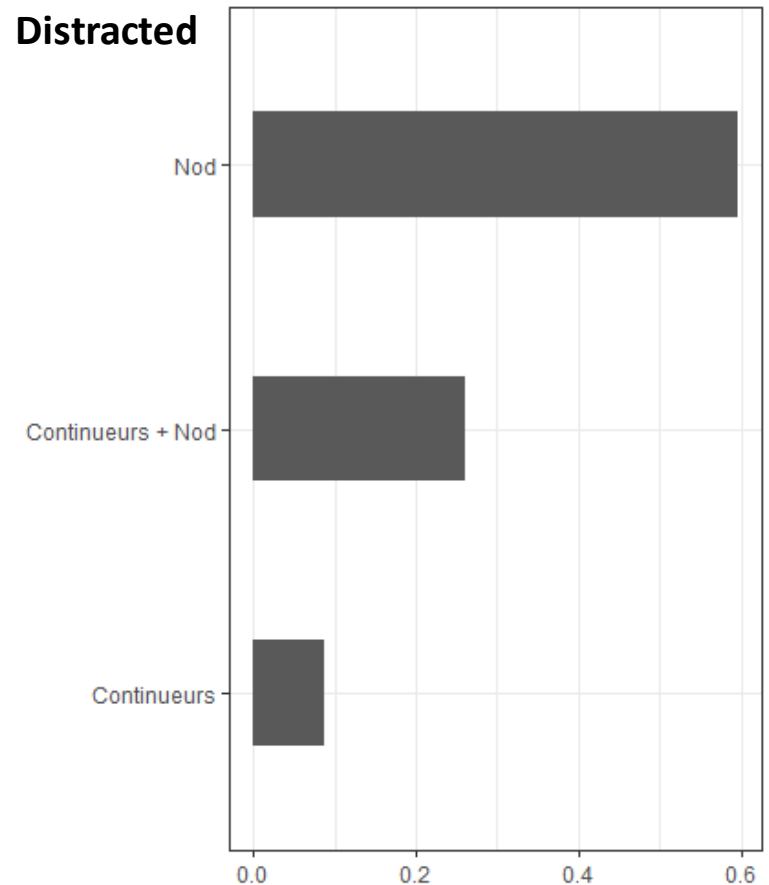
# Feedback Components Combinations

95% of the most common **generic** feedback components combination

**Normal**



**Distracted**



# Feedback Components Results

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**Hyp3:** Feedback produced during the distracted condition will be composed of a minimal quantity of components (less rich/complex)

✓ **Hyp 3:** Only for **generic** feedback



# Storytelling quality assessment

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- ✓ **Hyp 4:** Lower quality of the storytelling, as rated by a third party in distracted condition than in normal condition

**Method: Storytelling quality assessed by 3 raters** - Scores between 0 and 3  
*rhythm, clearness, detail, comfort, ending, interest*

## Mean scores:

- **Normal** condition = 2.47
- **Distracted** condition = 1.58

## Results:

Scores are significantly lower for storyteller in the distracted condition:

- T-test:  $p = 0.002$
- Large effect size (Cohen  $d = -1.44$ )



# Feedback Frequency & Storytelling Quality

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*Impact of the feedback frequency on the quality of the storytelling?*

- ✓ **Hyp 5:** We expect a positive correlation between the frequency of specific feedback and the quality of storytelling
- ✓ Negative correlation in distracted condition not expected !

Correlation test between feedback frequency and storytelling score:

- **Generic:**

- Distracted condition:  $\rho = 0.04$  CI = [-0.29, 0,35]
- Normal condition:  $\rho = -0.03$  CI = [-0.34, 0,3]

- **Specific**

- Normal condition:  $\rho = \mathbf{0.57}$  CI = [0.3, 0,75]
- Distracted condition:  $\rho = \mathbf{-0,49}$  CI = [-0.7, -0,2]



# Conclusion and Discussion

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Distraction affect both generic and specific feedback but in distinct way:

- **Generic** become **less elaborate**
- **Specific** become **less frequent**

Correlation between specific feedback and storytelling quality:

- **Positive** correlation in **normal** condition:
  - Less specific feedback listeners provide, the lower the quality of the storytelling
- **Negative** correlation in **distracted** condition
  - The more specific feedback is produced, worse is the storytelling quality
    - Suggesting that feedback being produced inappropriately (timing, content, form)

**Perspectives:** *Can we use the EEG signal to investigate what's happened before, during and after the feedback?*



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Thank you!

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Institute of  
Language, Communication  
and the Brain





# Originality of the SMYLE corpus

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## Same participants enrolled in:

- 3 storytelling:
  - Retelling a video clip ([Chafe, 1980](#)).
  - Telling the plot of a movie/TV show/book/video game.
  - Recounting their best holidays.
- A free conversation.

## Instructions

- We do not inform the storyteller that listeners are doing something else than listening.
- We instruct the distracted listeners that *“the storyteller should not realize it”*.

## Annotations

- Generic and specific feedback type:
  - Accurate annotation of the feedback form.
- Multimodal annotations on the entire interaction.
- Both listeners and main speakers are annotated.