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# Smiling and humor in French conversations

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- **Is smiling a marker of humor?**
- **Does smiling have an impact on its success or failure?**



First elements of answer with an exploratory study based on « **Cheese!** », a conversational corpus audio and video recorded

### **Smiling in conversation**

- A « facial gesture » (Bavelas et al., 2014) with communicative functions
- Analyzed both through its presence/absence and intensity
- In line with previous studies about the role of “framing” of the synchronicity of smiling (Priego-Valverde, 2017; Priego-Valverde and Bigi, 2016) and the role of smiling and smiling synchronicity, as a discourse marker (Gironzetti et al., 2019)

### **Failed humor**

- Items triggering negative reactions (Hay, 1994; Hay, 2001; Eisterhold et al., 2006; Attardo, 2002; Bell, 2009)
- 3 types of reactions (Priego-Valverde, 2019; 2020)
  - Humor acknowledged but answered seriously
  - Humor ignored
  - Humor explicitly rejected

### « Cheese! »

- **Audio-video conversational corpus** recorded in 2016 (LPL)
- At first collected for a cross-cultural comparison of smiling during humorous productions between American English and French (Priego-Valverde et al., 2018)
  - Recorded following the American protocol, as closely as possible (Attardo, S. and al. 2011)
- **11 mixed and non-mixed dyadic interactions** (around 15 minutes each)

### Participants

- 22 participants: students in Linguistics (Aix-Marseille University)
- Each pair constituted of good acquainted participants
- French native students
- From 20 to 40 years old
- All signed a written consent form before the recording



### Experimental protocol

- **2 tasks**
  - A canned joke to read each other
  - To speak as freely as they wished until the end of the interaction
- The participants were recorded in a **soundproof room**
- They were seated face-to-face
  - One camera behind each other
- Participants were fitted with two headset microphones optimally positioned so as not to hide the mouth

**Annotation of humor**

**General annotation of Cheese!**

- Audio files segmented in **IPUs** of 200ms (Inter Pausal Unit)
- **Manual orthographic transcription** (Blache et al. 2009)
  - Using Praat (Boersma 2002)
  - One tier for each speaker
- Manual annotation of **laughter** (@)
- **Laughing speech** manually transcribed (@@speech@@)

**Annotation of humor**

- **Humorous sequences** classified as canned joke (CJ) or conversational humor (CH)
- **Humorous items** extracted within each humorous sequence
- And distributed as **failed** (Fa) and **successful humor** (Su)
  - According to the type of reaction (Priego-Valverde, 2019; 2020)
    - Humor acknowledged but answered seriously (A)
    - Humor ignored (I)
    - Humor explicitly rejected (R)
- When none of these reactions were observed > successful humor

#	ipu_34 t(u) as c ompris c'était	#	MA-IPU (585)
ipu_43 ah ouais elle é	#	ipu_44 ouais je trouve q a rigolo de tomber sur e	PC-IPU (646)
	H_3	E_3	Humorous seq (69)
	CH		Type of humor (37)
	Fa		MA-Item (S/F) (46)
	2.2		MA-Mean (46)
	NBFC_He		MA-Reason of (9)
	I		Reaction (2/3)

**Number of humorous sequences**

Participants	Number of humorous items	Average number
MA	23	1.3/min
PC	32	1.8/min
JS	39	2.36/min
CL	53	3.2/min

**Annotation of smiles**

**Smiling Intensity Scale (Gironzetti et al., 2016)**

- Based on Action Units (Facial Action Coding System - FACS - Ekman and Friesen, 1978)
- Smiling measured from 0 (neutral face) to 4 (laughter)



**Annotation of smiles**

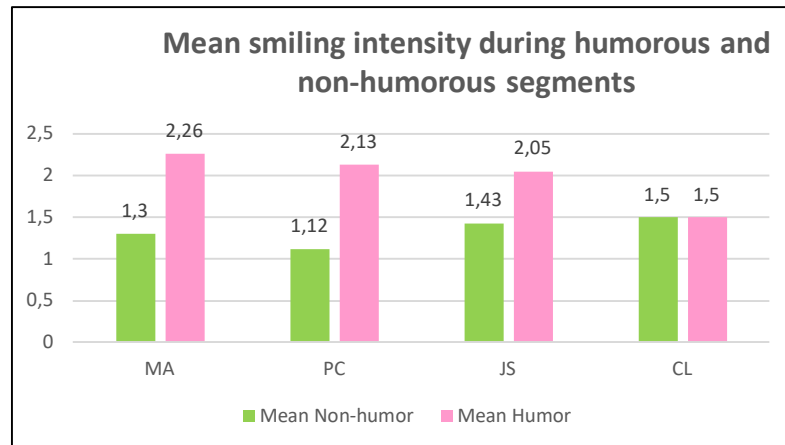
- Manual annotations of smiles with ELAN software on each participant
- Each interaction was divided into 400 ms intervals
- Each interval was assigned a smile intensity
  - 2610 smile intensities annotated in MA\_PC
  - 2475 in JS\_CL
- Inter-annotator agreement rates were qualified as excellent: 0.87 for MA\_PC and 0.89 for JS\_CL (Cohen's Kappa calculation (Cohen, 1960))

	00:06:53.000	00:06:54.000	00:06:55.000	00:06:56.000	00:06:57.000	00:06:58.000	00:06:59.000	00:07:00.000										
Sourire_JS-1 (2476)	0	0	0	0	1	4	4	4	4	4	4	4	3	3	3	3	3	
Sourire_CL-1 (2476)	0	0	0	0	1	1	1	1	3	3	3	3	3	3	3	3	3	2
Transition_conv (13)					indice de transition		initiation du thème			ratification								
Transcription_J (634)	ipu_#				ipu_169  #			@ t(u) as vu @			il a p  #							
Transcription_CL (769)	ipu_184 mais \$ Thé  #				ip  #			ipu_186 il a une bonne  #			ipu_187 c'est que ça va + pas et comr							



## Is smiling a marker of humor?

- Comparison of smiling mean intensity during humorous and non-humorous segments

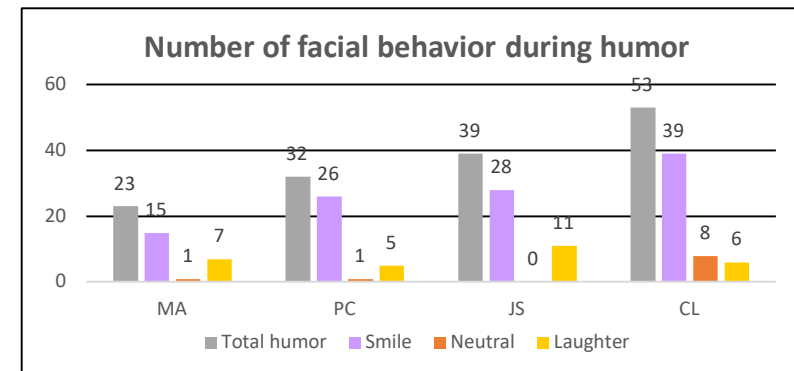


- Except for one participant, mean smiling intensity is mainly higher during humorous sequences, (consistent with (Gironzetti et al., 2019))



**These results tend to indicate that both mean smiling intensity and presence/absence of smiling are markers of humor**

- Comparison between smiles and other facial behaviors (neutral face and laughter) during humorous segments



- Smiling is the most frequent facial behavior displayed by all the participants while producing humor
- Laughter is far less frequent
- Neutral face is rare



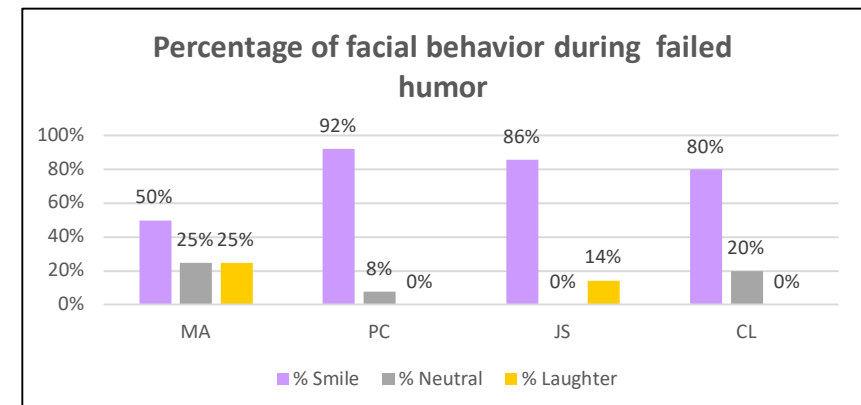
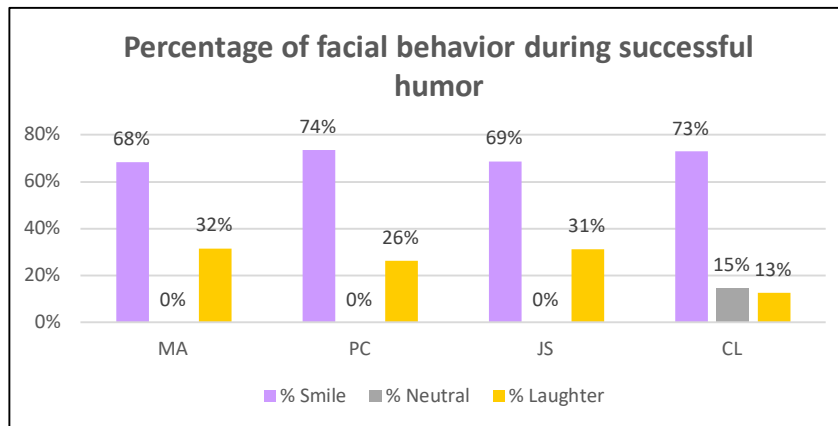
## Does smiling have an impact on its success or failure?

### Number of failed humorous items

- Failed humor is less frequent than successful humor (see (Priego-Valverde, 2020))
- Clear tendency, except for one participant (PC)

Participant	Number of failed humor
MA	4/23
PC	13/32
JS	7/39
CL	5/53

### Comparison of the percentage of smiles present in failed and successful humorous items

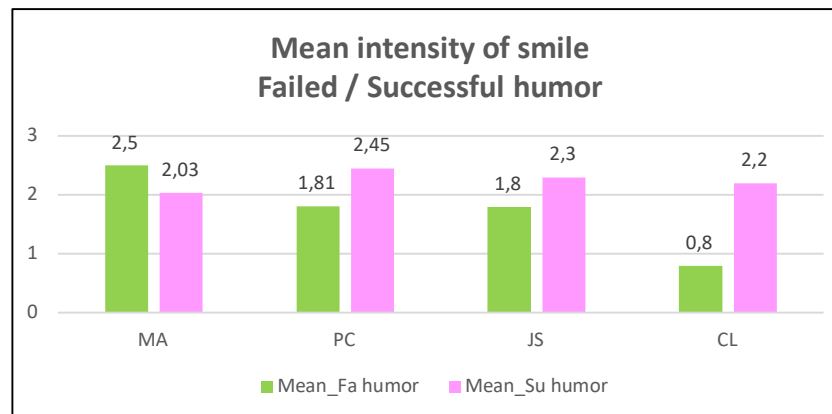


- Both in failed and successful humor, smiles are much more present than any other facial behavior
- Smiling is a marker of humor
- But smiling does not diminish the risk of failure



## Does smile intensity have an impact on its success or failure?

- Calculation of the mean smiling intensity displayed both in failed and successful humorous items



- 3 participants display a higher mean smiling intensity during successful humor
- But MA's one is lower during successful humor than failed humor
  - MA being the only male participant => gender effect?





RESULT

## Smiling seems to be a marker of humor

- **Smiling** is the most frequent facial behavior used during humor
    - More than neutral face and more than laughter
  - **Mean smiling intensity** is higher in humorous than in non-humorous sequences
    - This result is consistent with previous studies (Gironzetti et al., 2019)
- **Both the presence and the mean smiling intensity seem to be a marker of humor**

## Role of smiling as a reducer of failure not significant

- **With successful humor**, all the participants display **more smiles** than other facial behaviors
    - With a **higher mean intensity** than with failed humor, **except for MA**
  - **With failed humor**, all the participants display **also more smiles** than other facial behaviors
    - With a **lower mean intensity** than with successful humor, **except for MA**
- **Mean smiling intensity seems to be a more robust criterium than the sole presence or absence of smile to evaluate the impact of smiling on the success or failure of humor**



- **Analysis of only 2 conversations of « Cheese! »: deeper analysis is needed**
- Inter-individual variations:
  - **MA**: a higher mean smiling intensity displayed during failed humor
  - **CL**: same smiling intensity during humorous and non-humorous sequences
    - Maybe reduced by her very low mean smiling intensity with failed humor

### Further studies in 2 directions

- This same analysis extended to the entire corpus
  - To confirm (or not) the role of smiling and mean smiling intensity as a **marker of humor**
  - To evaluate the real **impact of mean smiling intensity on the success or failure** of humor
- Certain factors could explain some of the variations in our results: they need to be explored
  - Gender
  - Conversational topics developed by the participants

