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Smiling for negotiating topic transitions in French conversation

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Abstract

This study focuses on participants' smiling behavior as a resource for negotiating topic transitions in French conversations. The smile will be analyzed as a resource during topic transitions: through its intensities and its development. This study will show that the speaker's smiling dynamic contributes to initiating a transition and that the hearer tends to synchronize his/her smile with the speaker to ratify it.

Index terms: smile, topic transition, conversation, alignment.

1. Introduction

In line with previous work considering the smile as an “interactive gesture” (Bavelas & Gerwing, 2007), smile will be apprehended here as a facial gesture that conveys interactive functions. While it has been mostly analyzed in a binary way (presence/absence), it will be investigated through 5 degrees of intensity, from neutral (0) to laughter (4) (Gironzetti, Attardo & Pickering, 2016). Such an approach will lead us to investigate the way it evolves during a conversation, highlighting the fact that its significance lies not only in its mere presence but also in the way it decreases or increases. Consequently, smile will be investigated in the present study as a resource whose presence and coordination allow participants in a conversation to negotiate topic transitions. Topic transitions are “conversational moves” (Riou, 2015) necessitating negotiations between the participants to be accepted and developed as the next subject under discussion, i.e., “what a portion of the interaction is about” (Berthoud & Mondada, 1995). Following Tannen (1984), a topic transition is considered as such only when the proposed topic is developed by the participants. Several works have pointed out that topic transitions are initiated with various “thematization markers” (De Fornel, 1988; Porhiel, 2005). Among various kinds of markers, smile has been investigated during emotional transition (Kaukomaa, Peräkylä, & Ruusuvuori, 2013). Furthermore, two strong moments are distinguished in the topic transition: the “initiation” (Maynard, 1980), i.e., the proposition of the topic by the speaker (S) and the “ratification” (Riou, 2015) i.e. the approval of the proposition by the hearer (H). In line with previous studies on conversations viewed as collaborative (Sidnell & Stivers, 2012) and as a “joint activity” (Clark, 1996), this study focuses on smiling as a resource for negotiating topic transitions. The question underlying this study is: how does the smile impact the success of a topic transition? Two hypotheses are proposed: (1) while initiating a transition, S displays a different smile intensity according to the presence or absence of verbal markers; (2) while ratifying the transition, H aligns his/her smile with the S's smile. In this exploratory study based on 2 conversations, these hypotheses will be tested using a mixed methodological approach linking quantitative methods used in Corpus Linguistics and qualitative analysis in line with Conversational Analysis and Interactional Linguistics frameworks (Couper-Kuhlen & Selting, 2001).

2. Methodology

2.1. Corpus and participants

This study is based on “Cheese!” (Priego-Valverde, Bigi, Attardo, Pickering, & Gironzetti, 2018) an audio and video corpus recorded in 2016. This corpus is composed of 11 dyadic interactions (around 15 minutes each) between two native French speakers and students at the university. None of them knew the real purpose of the experiment nor did they receive any compensation for their participation. All signed a written consent form. Both mixed and non-mixed dyads were created

without any gender requirement. This present study is based on two interactions of this corpus: JSCL, two 3rd year female students, and MAPC, respectively being 2nd year male and female student.

2.2. Experimental setting

Participants were seated face-to-face in a soundproof room. Two cameras were positioned behind their back and pointed at the other participant's face. Both were fitted with a micro headset, optimally positioned so as not to hide the mouth while preserving the acoustic signal. Each participant was asked to read a text (a canned joke). After the reading part, participants had 15 minutes to discuss as freely as they wished. Our analyses are focused on the conversational part.

2.3. Annotations






2.3.1. IPU parsing and transcription of speech signal

Our selected corpus had been annotated at two levels using SPPAS software (Bigi, 2015). The speech signal was automatically parsed into Inter-Pausal Units (IPUs), i.e., fragments of speech separated by 200 ms breaks. Then, the speech signal was transcribed manually according to the Enriched Spelling Transcription (Bertrand, et al., 2008).

2.3.2. Smiling annotations

Smiles were annotated, relying on the “Smiling Intensity Scale” (SIS) (Gironzetti, Attardo, & Pickering, 2016). The SIS measures the smile intensity gradually from 0 (neutral face) to 4 (laughter), based on Action Units (AUs) detailed by the Facial Action Coding System (FACS) (Ekman & Friesen, 1978). Below the 5 levels of smile intensity are presented by pictures of our corpus:

Table 1
Smiling Intensity Scale (Gironzetti, Attardo & Pickering, 2016)

				
0 - No smile	1 - Closed mouth smile	2 - Open mouth smile	3 - Wide open mouth smile	4 - Laughing smile

According to this scale, manual annotations of smile were performed with ELAN software on each participant (Brugman & Russel, 2004). Each interaction was divided into 400 ms intervals, as this is considered the time necessary to produce or perceive a complex gesture such as smiling (Sanders, 1998; Heerey & Crossley, 2013). Then, each interval was assigned a smile intensity: 2610 smile intensities were annotated in MAPC and 2475 in JSCL. This method allows us to analyze the evolution of each participant's smile (increase/decrease) in a very precise way.

2.3.3. Inter annotator agreement

A counter-coding was carried out on both interactions to validate the reliability of these annotations and the relative objectivity of the scale used. We then calculated Cohen's Kappa (Cohen, 1960), a statistical measure used to compare the annotations of two judges. Both inter-annotator agreement rates were qualified as excellent: 0.87 for MAPC and 0.89 for JSCL.

2.3.4. Topic transition

In line with Riou's methodology (2015), the identification of the transitions was conducted in 5 steps. Below, we illustrate our methodology with a chronological table where each step of annotations is illustrated with an example from our corpus. After having talked about the text that they have read, S asked “what would you like to talk about” and H answers “the semantic course”.

Table 2
Methodology to identify topics transitions

Steps	1. Topic under discussion	2. Transition initiation	3. Ratification	4. Thematization markers	5. Type of markers
Indicator	Key words	Identifying the frontier between topic 1 & topic 2	YES or NO	YES or NO	Verbal or Non verbal
Examples	“semantic course”	“then, what would you like to talk about?”	YES	YES	Verbal “then”

Such methodology leads to an analysis of the complete transition, from its initiation by S to its ratification by H. As a result, 28 transitions were extracted from our corpus.

3. Quantitative results

After having identified the topic transitions (Table 2) present in the conversations of our corpus, we analyzed smiles in these specific moments: S’s smile while s/he initiates a transition, and H’s smile when s/he ratifies the transition.

3.1. Topic transitions

28 topic transitions were identified in the two interactions: 12 in MAPC and 16 in JSCL—on average, one transition per minute. As for topic transitions, the results show that the S tends to initiate a transition more often with than without a verbal marker: 20 transitions were initiated with verbal markers. This trend has led us to investigate the role of S’s smile in these two types of transition, and correlatively, H’s smile when a transition has been proposed.

3.2. Participants’ smiles

During **both entire conversations**, participants smile for more than a third of the time: **39.5%** on average (36% in MAPC and 43% in JSCL). This result is consistent with previous studies, such as (Cosnier, 1987; Bavelas & Gerwing, 2007). More interestingly, comparing the presence of smile in the whole conversation with smile during transitions (from their initiation to their ratification) shows that smile is predominant while the participants are making a transition. Indeed, participants smile during **78.13%** (on average) of the time spent doing transitions. This interesting result shows that **smiling appears even more during topic transitions** than in the rest of the conversation and that smile could have a specific role during topic transition.

In more details, concerning the **initiation phase** of a transition, the results show that there are many more transitions initiated with than without a smile (18 against 10). More precisely, in MAPC 7 transitions are preceded by a smile (out of 12); in JSCL 11 transitions are preceded by a smile (out of 16). These results show that S is more likely to smile when s/he initiates a transition (on average in 63.54% of the initiations). As for the 18 transitions initiated with a smile, S’s smiles during transitions were systematically compared with his/her smiling behavior (increase vs. decrease) before and after the initiation. Two types of evolution were observed:

- S increased their smile in 9 transitions’ initiations: 5 in MAPC and 4 in JSCL.
- S decreased their smile in 17 transitions’ initiations: 5 in MAPC and 12 in JSCL.

In other words, S systematically change the intensity of their smile when they initiated a transition (in 93% of the corpus initiations).

As shown in the figure below, the types of smile shift (increase/decrease) were analyzed according to the type of transition (with/without a verbal marker).

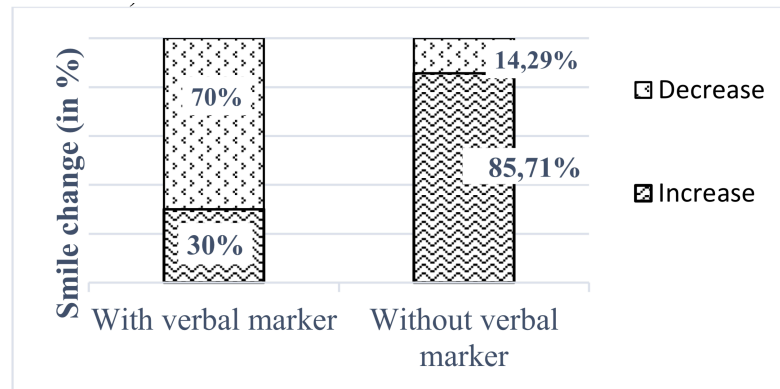


Figure 1. Proportion of S's smile shift according to the presence/absence of verbal marker in topic transition.

The figure above shows a relationship between the presence/absence of verbal markers and the S's smile shift and reveals two results:

- When S initiates a topic transition with a verbal marker, s/he reduces his/her level of smile in 82% of the cases: **a reduction of smile is more likely used when the transition is initiated with a verbal marker.**
- When S does not use any verbal marker to initiate a transition, s/he displays a stronger smile in 80% of the cases: **an increased smile is more likely used when the transition is not initiated with any verbal marker.** These two results show that S's smiling behavior is linked to the presence or absence of verbal markers. Moreover, they highlight the complementarity of smile and verbal resources when S initiates a transition. This tends to confirm our first hypothesis according to which smile change is linked with the way S initiates a transition. Consequently, they suggest that smile, like verbal markers, may be a linguistic resource for sequential organization of the transitions.

As well as S's smiling behavior, **H's smiling behavior** was investigated when s/he ratify a topic transition. Concerning **the ratification phase**, our data show that many more transitions were ratified with than without a smile (19 against 9). This result shows that H is more likely to smile when s/he ratifies a transition (on average in 66.67% of the cases). Nevertheless, the analysis of the two conversations reveals contrasted results, 7 of the 12 topic transitions in MAPC were ratified with a smile, and 12 against 16 in JSCL. This could be explained by the difference in the topics addressed by the participants (in preparation). Then, applying the same classification of smile change (increase/decrease) to H, his/her smiling behavior was compared with S's smiling behavior:

- When S initiates a transition, decreasing his/her smile, H also decreases his/her smile in **83.33%** of every decreasing case. This trend is noticeable in 66.67% of the decreasing smile ratification of MAPC and in every cases of JSCL. This different distribution of smile decrease alignment can be explained by the fact that there are more transitions initiated with a verbal marker in JSCL than in MAPC, thus there are more transitions initiated with a smile decrease in JSCL.
- When S initiates a transition, increasing his/her smile, H also increases his/her smile in **87.5%** of every case. This trend is noticeable in every increasing smile ratification of MAPC and in 75% of JSCL.
- Combining the two interactions reveals that when the transition is accepted by H, both participants of each interaction operate a smile alignment in **85.42%** of the cases.

This result shows that not only participants tend to reciprocate their smiles (Capella, 1997; Hess & Bourgeois, 2010), but they also synchronize their smiling development. Such a result confirms our second hypothesis according to which H aligns his/her smile when a transition is ratified.

4. Qualitative analysis

[illegible]

More generally, this example illustrates the pattern found in our corpus: the fact that there is or is not a verbal marker to initiate a transition determines whether the smile is increasing or decreasing. Moreover, when S increases his/her smile, H aligns his/her smile. This analysis confirms that smile may be a specific resource used to negotiate a topic transition.

This exploratory study has shown that S tends to initiate many more transitions with a smile than without (24 out of 28 cases). During the transition initiation, S tends to decrease his/her smile when a verbal marker is present, and s/he tends to increase his/her smile when no verbal marker is produced. As for H, the results suggest that not only does s/he mostly smile while s/he perceives a transition but also s/he tends to align his/her behavior with S's smile. In other words, the observed similarity in the smile development seems to contribute to the success of the transition, which leads to the development of the initiated conversational topic. Such results suggest that both S's and H's smiles may be considered a resource used by both participants in order to negotiate a topic transition. Beyond highlighting the tendency that participants synchronize their smiling development, this study confirms that a conversation, even during moments as short as topic transitions, remains deeply co-constructed. Thus, this study seems also to confirm that smile is a resource of collaboration between participants. Although promising, such results have been obtained based on only 2 conversations, our analysis must therefore be deepened. As a first stage, the 9 other interactions of the present corpus will be analyzed in order to confirm or overturn the

interactional patterns highlighted here. Further investigations are currently being conducted. First, we have noticed that the topics identified in the 2 conversations were various (i.e. the soundproof room, the participants' studies, their friends, their romantic relationship); it would be interesting to analyze the impact of **topic type and duration** on smile development during transition. Secondly, some of these topics are deeply related to the participants' **common ground** (in preparation); here again it would be interesting to analyze the impact of common ground on smiling during transitions.

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Transcription conventions:

Truncated words: smi-smile

Initials for names: N for Name

Speech in overlap: Underlines words

Smile intensities are aligned with the audio files, one line for each participant.

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