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On the Multifunctionality and Multimodality of Silent Pauses in Native and Non-native Interactions

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This paper explores the multifunctional uses of silent pauses, adopting a multimodal perspective. Pauses are said to serve numerous functions in speech, and this small comparative study looks at their distribution across L1 and L2 speakers in face-to-face interactions. While overall results showed a higher rate of pauses in L2 than in L1, a lot of individual differences were also found. The visual-gestural features of discourse (gesture, gaze, facial expressions) were found to be essential when analyzing pauses as they can reflect their multifunctionality in a different modality, which allows for a deeper understanding of their internal processes in L1 and L2.

INTRODUCTION

When we speak spontaneously, we constantly need to produce pauses for a variety of reasons. From a strictly physiological point of view, pausing is necessary to allow us to breathe and inhale between cycles of speech; but pauses can also serve several functions in discourse, such as planning and structuring speech, marking a word, holding the floor, or allowing other people to take the turn. This paper focuses on the use of silent pauses, i.e. "silent periods between vocalizations" [1].

Silent pauses have been studied from several perspectives: they can be viewed as hesitation or disfluency markers [2, 3] which suspend the speech flow and occur when speakers are uncertain or thinking what to say next. In non-native speech, L2 speakers tend to produce more pauses of longer duration and in mid-clause position before low-frequency words [4,5] which can be explained by their limited proficiency of the language [1]. However, pauses can also be viewed as important components of interaction, as they serve several communicative functions. In *Conversation Analysis*, a delay in speech can be interpreted as meaningful as it can be a sign of a dispreferred answer in assessments [6], and pauses can also be used to manage turn-taking [7]. The use of pauses is also affected by several factors, such as individual variation, speaking style, and the type of speech produced [8].

Grounded in a functional, dynamic, and interactional approach to grammar [9], this paper aims to explore the multifunctionality of silent pauses in native and non-native interactions of French and English, following a multimodal perspective [10]. A few studies have looked at the production of gestures during pauses in native and non-native conditions [11, 12], but it is still an aspect that has not been widely explored in pausing phenomena. Since pauses are known to serve a variety of functions, the visual-gestural modality of discourse (eye gaze, facial expression, manual gestures) can provide a deeper understanding of their different internal processes. The main hypotheses for this study are that (1) silent pauses occur more frequently in L2 speech than in L1, but they appear in similar functional contexts, (2) L2 speakers will make use of more gestures during pauses than L1 speakers and these gestures can reflect their multifunctionality.

METHOD

This small study of pauses was conducted on a sample of the SITAF Corpus [13] which includes 12 video recordings of dyadic interactions between French and American students (undergraduate level) engaged in semi-directed conversations (6 pairs). The speakers interacted respectively in English and in French, alternating from L1 to L2. The methodology used for this analysis is adapted from previous studies conducted on the use of (dis)fluencies [14, 15] which looked at the distribution of several (dis)fluency markers (filled pauses, silent pauses, repetitions, repairs etc.). The silent pauses were extracted from the data and were coded manually according to their (a) duration in ms (400ms minimum duration threshold, following [4]) (b) level of combination, whether they appeared isolated, or combined with other (dis)fluency markers, and their (c) functional contexts. The term "function" here is replaced by "context" as it is difficult to tell whether a single silent pause serves one attributed function as it can always be affected by its co-occurring markers, its context of use, and the accompanying manual gestures. Four functional contexts were defined: (1) structuring—contexts in which the speaker is currently planning, structuring, emphasizing parts of their speech, which can be indicated by the presence of discourse markers (and, but, or); (2) uncertainty—contexts in which the speaker shows signs of uncertainty (e.g. frown); (3) interactive—contexts in which the speaker is engaged in the interaction and expresses their stance (e.g. gaze towards the interlocutor, interactional gesture), (4) undefined. Since pauses can also be used for physiological reasons or other reasons that are unknown or very difficult to detect, this category was used when pauses occurred in

contexts which did not apply to those described above. Lastly, the gestures which occurred during pauses were also annotated, by looking at the "gesture phrase" [10] whether the gestures remained in rest position (on the lap), were held in the same position, or if they were fully produced. The functional types of gestures were also annotated, mainly (1) *referential gestures*, which are related to the meaning conveyed in the content of speech, (2) *deictic-anaphoric* gestures, which place referents in time and space through pointing, (3) *parsing gestures*, used for emphasis or marking speech segments (production-oriented), (4) *thinking gestures*, metapragmatic gestures produced during communication breakdown, (5) *interactional gestures*, which enact a communicative action (speech act, interactional move-interaction-oriented).

RESULTS

A total of 468 silent pauses were found in the data. On average, L2 speakers produced significantly more silent pauses than L1 speakers (p=0.0004). They produced 6,3 silent pauses per hundred words (N=288) as opposed to L1 speakers who produced 3,7 (N=180), which corroborates previous findings. Less significant differences were found in the duration of the silent pauses, as they lasted on average 739ms in L1 and 795ms in L2 (STDV 428 and 458) but a lot of individual differences were found. For example, one American speaker produced pauses of an average duration of 1197ms in his L1 and of 846ms in his L2, which does not support previous predictions [5], so no clear-cut conclusions can be made at this point. Silent pauses were also found to occur more frequently in co-occurrence with other (dis)fluency markers in L2 (54% N=156) than in L1 (38% N=69), which shows that silent pauses often combine with other markers, such as filled pauses [16,17,18], but the fact that L2 speakers produced more clusters of pauses and (dis)fluency markers may indicate that they resort to different stalling mechanisms and need to fill the silence with other vocal markers.

Results also show that the pauses behaved very similarly in L1 and L2 as no significant differences (p=0.08) were found in their distribution according to the functional contexts: 44% for undefined (N=79/180 in L1; N=128/288 in L2), 7% for uncertainty (N=11/180 in L1; N=19/288 in L2), 9% for interactive (N=16/180 in L1; N=21/288 in L2), and 40% for structuring (N=71/180 in L1; N=114/288 in L2). This finding shows that a lot of pauses tend to be produced in a semi-automatic way for no clear pragmatic reasons other than just buying time in speech (44%) and for structuring and segmenting speech (40%), but it does not seem to be affected by language proficiency as the native and non-native conditions show similar behavioral patterns. But once again, a lot of individual differences were found, as some speakers produced much more pauses in contexts of uncertainty in their L2 than in their L1. Additionally, more gestures occurred with pauses in L2 speech (56% N=163) than in L1 speech (36% N=65) (p=0.01), which partially confirms the view that L2 speakers produce more gestures than L1 speakers [18], but this needs to be confirmed by looking at all the gestures in the data. L2 speakers also produced more thinking gestures in pauses (27% of the completed gestures) than L1 speakers (17%) while L1 speakers produced more parsing gestures in pauses (46% of their completed gestures, as opposed to 38% for L1 speakers). These findings point out the gestural activity found during pauses, and this will be illustrated in the following qualitative analyses.

Qualitative analyses: example from a pair

As it has often been mentioned in the literature, the use of (dis)fluency markers varies strongly per speakers [20], so it is essential to look at the individual profiles of speakers when investigating the use of silent pauses. This paper will now focus on two qualitative analyses taken from one pair of the corpus. In these examples, the two participants are interacting in French and are discussing the differences between being a traveler and being a tourist.

In the first example, the non-native speaker (NNS) is talking about travelers who get to stay in a foreign country for a longer time, but she mispronounces the noun "longer" *(plus longtemps*). She quickly realizes her mistake, and as Fig. 1 shows, she then produces a silent pause of 580 ms, but she also holds her hands in the same position, and with her gaze fixed on her interlocutor she slightly moves her head in the direction of her partner, to elicit help.

Fig 1. Multimodal activity during a silent pause: implicitly seeking help from the interlocutor

The native speaker (NS) quickly understands her partner's request, and gives her the right pronunciation of the word; then NNS repeats the target word, this time with the right pronunciation, and finishes her sentence. This example shows that NNS did not verbally seek help from her interlocutor, but she instead relied on multimodal resources (pausing, holding her hands, and gazing) to ask for the right pronunciation and to give her partner the floor, which stresses out the interactional dimension of pauses.

In the second example, NS is talking about how tourists tend to see trips as 'to-do lists' as they aim to go to one place and see different monuments. When she starts saying that tourists like to go to one place, she produces a silent pause before the noun "place" and produces a vertical movement with her right hand towards her left open palm (Fig. 2). She then repeats the same gesture after saying the word 'place' and repeats it again as she

produces a lexical repetition: “this monument, this monument, this monument”. The type of gesture produced in the pause is different from the one in Fig. 1 as in this case she is rather “marking the words” (see [12]), in other words, she is emphasizing key words in her utterance, as to draw attention to them. When she first initiated this gesture, it was during the silent pause, which stresses out its pragmatic use. She may have produced it to make her speech clearer for her partner (interaction-oriented) or to mark distinct speech segments (production-oriented). In any case, the gesture accompanying the silent pause was found to be informative of the ongoing processes associated with her pausing.

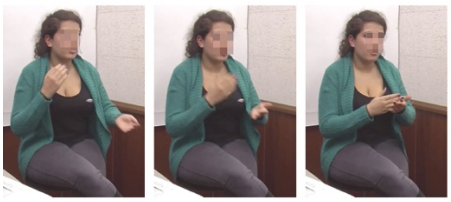

Fig 2. Initiation of a parsing gesture during a pause: marking the words

CONCLUSION

To conclude, this small comparative study has stressed out the multifunctionality and multimodality of silent pauses in native and non-native speech. Silent pauses can be used as strategies to resolve speech difficulties, to emphasize parts of speech, to make an interactional move, or simply to buy time. While some of them appear to be semi-automatic, it is important to take individual differences into account, as speakers make use of them in different ways to achieve different things. The multimodal approach used in this study was found to be essential when analyzing the interactional dimension of pauses in the qualitative analyses. In this view, pauses are no longer ‘silent’ or ‘unfilled’ in the multimodal sense as they can be filled with other rich semiotic resources.

REFERENCES

[1] Cenoz, J. (1998). Pauses and Communication Strategies in Second Language Speech. (ERIC Document ED 426630).

[2] Goldman-Eisler, F. (1958). The predictability of words in context and the length of pauses in speech. *Language and Speech*, *1*(3), 226–231

[3] Maclay, H., & Osgood, C. E. (1959). Hesitation phenomena in spontaneous English speech. *Word, 15*(1), 19–44.

[4] Tavakoli, P. (2011). Pausing patterns: Differences between L2 learners and native speakers. *ELT Journal, 65*(1), 71–79.

[5] De Jong, N. H. (2016). Predicting pauses in L1 and L2 speech: The effects of utterance boundaries and word frequency. *International Review of Applied Linguistics in Language Teaching*, *54*(2), 113-132.

[6] Roberts, F., Francis, A. L., & Morgan, M. (2006). The interaction of inter-turn silence with prosodic cues in listener perceptions of “trouble” in conversation. *Speech Communication, 48*(9), 1079–1093.

[7] Schegloff, E., Jefferson, G., & Sacks, H. (1974). A simplest systematics for the organization of turn-taking for conversation. *Language, 50*(4), 696–735.

[8] Duez, D. (1982). Silent and non-silent pauses in three speech styles. *Language and Speech, 25*(1), 11–28.

[9] Mondada, L. (2001). Pour une linguistique interactionnelle. *Marges Linguistiques, 1*, 142–162.

[10] Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge University Press

[11] Tellier, M., Stam, G., & Bigi, B. (2013). Gesturing while pausing in conversation: Self-oriented or partner-oriented?”. *The Combined Meeting of the 10th International Gesture Workshop and the 3rd Gesture and Speech in Interaction Conference.*

[12] Stam, G., & Tellier, M. (2017). The sound of silence. *Why Gesture?: How the Hands Function in Speaking, Thinking and Communicating, 7*, 353.

[13] Horgues, C., & Scheuer, S. (2015). Why some things are better done in tandem. In *Investigating English Pronunciation* (47–82).

[14] Kosmala, L., & Morgenstern, A. (2017). A preliminary study of hesitation phenomena in L1 and L2 productions: A multimodal approach. *TMH-QPSR*, 37.

[15] Kosmala, L., Candea, M., & Morgenstern, A. (2019). Synchronization of (Dis)fluent Speech and Gesture: A Multimodal Approach to (Dis)fluency. *Gesture and Speech in Interaction.* Presented at the Paderborn University. Paderborn University.

[16] Betz, S., & Kosmala, L. (2019). Fill the silence! Basics for modeling hesitation. *The 9th Workshop on Disfluency in Spontaneous Speech,* 11.

[17] Grosjean, F., & Deschamps, A. (1972). Analyse des variables temporelles du français spontané. *Phonetica*, *26*(3), 129–156.

[18] Merlo, S., & Mansur, L. L. (2004). Descriptive discourse: Topic familiarity and disfluencies. *Journal of Communication Disorders, 37(*6), 489–503.

[19] Graziano, M., & Gullberg, M. (2018). When speech stops, gesture stops: Evidence from developmental and crosslinguistic comparisons. *Frontiers in Psychology, 9*, 879.

[20] Betz, S., & Gambino, S. L. (2016). Are we all disfluent in our own special way and should dialogue systems also be? Elektronische *Sprachsignalverarbeitung (ESSV) 2016*, 81.