

LORENZO SPREAFICO
(Libera Università di Bolzano)

*Filled pauses in multilingual speech: an acoustic analysis*¹

In questo contributo si tratta di pause piene discutendo se possano essere impiegate nel parlato multilingue per indicare processi di negoziazione di lingua o annunciare alternanze di codice. Più precisamente nell'articolo si analizzano acusticamente le pause piene prodotte da un parlante trilingue di inglese, italiano e tedesco per valutare se esse siano linguo- o parlante- specifiche. L'analisi, basata sulla rilevazione dei valori formantici di F1 e F2, dimostra come l'uso delle pause piene sia invero parlante-specifico e, ancor più, che le pause piene prossime a punti di transizione tra lingue sono significativamente diverse da tutte le altre, ovvero possano essere ritenute valide indicatrici di processi di selezione di lingua.

1. Introduction

The objective of this case study is to investigate the potential of filled pauses (FPs) as conversational elements, primarily with regards to language negotiation processes. More specifically, the aim is to verify whether FPs produced by the same multilingual speaker in each of the languages known to him are acoustically similar. The hypothesis is that when FPs are acoustically similar, they correlate with the speaker on the basis of favoured articulatory settings (Honikman 1964) regardless of the language selected by them. In other words, they are speaker-specific. In contrast, if FPs are acoustically different and systematically correlate with the language used at the moment of production, they are language-specific and may be used in multilingual interaction as tools to signal language selection processes.

The question of language specificity of FPs has previously been addressed in studies by Clerc-Renaud / Vasilescu / Candea / Adda-Decker

¹ This is a revised and updated version of a preliminary conference report that was published in: Ferreri, Silvana (a cura di), 2012, *Linguistica educativa*. Atti del XLIII congresso internazionale di studi della Società di Linguistica Italiana, Roma, Bulzoni.

(2004); de Leeuw (2007); Vasilescu / Adda-Decker (2005); and Vasilescu / Adda-Deker (2007). These researchers investigated a discrete sample of languages including Arabic, Mandarin Chinese, French, Dutch, German, European Portuguese, American English and Latin American Spanish. The researchers observed language-specific characteristics in monolingual speakers “in terms of vocalic quality and segmental structures of the fillers” (Candea / Vasilescu / Anna-Decker 2005: 51). In this case study, the same question of the language specificity of FPs is addressed but by means of data from one trilingual speaker of English, German and Italian operating in and managing a multilingual interaction.

2. *Filled Pauses*

The term ‘filled pause’ (FP) was introduced by Maclay / Osgood (1959: 24) to refer to the parenthetical “hesitation devices [ɛ, æ, r, ə, m]” and to distinguish them from other hesitation phenomena, such as repeats, false starts and unfilled pauses, namely, “silence of unusual length and non-phonemic lengthening of phonemes“. Thus, in the collocation the term ‘pause’ does not refer to the lack of sound, but more generally to a disruption in the flow of speech. The debate on the intentionality of this disruption and the presence of a conventional meaning in FPs is the basis of the discussion in their linguistic nature, which is characterised by opposing views among researchers.

Several researchers consider FPs to be intentional and to have a conventional meaning; hence, they award them the status of linguistic elements, precisely the status of words (refer to Amiridze / Davis / Maclagan, 2010, and the contributions collected therein). In this sense, almost all of the authors who have considered FPs worthy of lexicological consideration (among the others Bazzanella 1994; Clark / Fox-Tree 2002; Ehlich 1986; Fraser 1996; Norrick 2009; Nübling 2004; Poggi 1981; Schachter / Shopen 2007; Ward 2006; Wierzbicka 1992; Wilkins 1992) have resorted to placing them in the class of interjections. FPs would then be members of a part of speech identifiable on a semantic and possibly pragmatic and morpho-syntactic basis.

Other researchers maintain that there is scarce evidence that FPs are deliberately produced by speakers and therefore regard them as manifes-

tations of unintentional processes of speech planning (Brennan / Schober 2001; Corley / Stewart 2008) or even noise in the signal (Abou-Zleikha / Tan / Christensen / Jensen 2014). Consequently, these authors consider FPs to be non-lexical linguistic elements or non-linguistic elements, materially devoid of the traits of signs in the strictest sense (Berruto 2010). Thus, in their opinion, FPs are scarcely significant for linguistic analysis (Bloomfield 1933: 186) because they are just symptoms (Levelt 1989: 484), elements outside of the linguistic system.

Nevertheless, because of their frequency in spontaneous speech, FPs have attracted the interest of many psycholinguists (refer to Goldman-Eisler 1968; Maclay / Osgood 1959 and more recently O'Connell / Kowal 2004) as well as conversationalists (refer to Goffman 1978; Jefferson 1983; Sacks 1992 *in primis*). In both cases, FPs are still treated as para-verbal elements that are intended to reveal mental states or processes (Dalton / Hardcastle 1989) and are used by the speaker for different purposes. For example, if wanting to signal a process of searching for a word or a problem with speech planning (a hypothesis previously discussed by Rochester in 1973 and reiterated in Schachter / Christenfeld / Ravina / Bilous 1991, which addresses this question regarding monologues); or if wanting to manage turn-taking (Goffman 1978: 293) and, in particular, if wanting to retain the turn. Therefore, FPs would primarily fulfil the function of floor holders².

However, an untested hypothesis is that if FPs are demonstrated to be language-specific and have a stable meaning, they might be used in multilingual interaction (Auer 1984; Gafaranga 1999; 2007), not only as floor holders but also as useful resources for the organization and negotiation of language alternations.

3. *Methods*

3.1. *Materials*

In order to check if FPs are language-specific, spontaneous data collected during an academic seminar held at a multilingual university were

² It is interesting to report the exception noted by Kowal / O'Connell (1993) concerning the speech of the US actor and president Ronald Reagan, who, in contrast, used FPs to relinquish a turn.

analysed. The seminar was attended by twelve native and non-native speakers of different languages, such as German, Italian, English, Spanish and Portuguese. As the seminar was aimed at encouraging the discussion among students and professors, as well as the inclusion and understanding of all of the participants in the activities, the participants had the opportunity to freely choose which language to use for the interaction by selecting among the official languages of the university, namely German, Italian, and English. As all participants took advantage of this chance, the seminar was characterized by frequent inter- and intra-speaker code-switching between the languages³.

3.2. *Equipment*

The seminar was audio and video recorded. For this study, only audio data are considered. The recording was made using four Edirol R1 digital recorders positioned opposite each group of speakers, sampling at 22.05 kHz and digitizing at 16 bit linear WAV. The unusual sampling rate of 22.05 kHz was preferred to the standard 44.1 kHz sampling rate to reduce the audio storage requirements. The seminar lasted for more than 5 hours of which the participants were free to leave and re-enter the room whenever they wanted to. The recordings were fully transcribed in ELAN (Wittenburg / Brugman / Russel / Klassmann / Sloetjes 2008) according to conversational conventions (Jefferson 2004).

3.3. *Participants*

Data for the actual analysis concerns the spontaneous productions of solely one participant in the activity who was the tutor and leader of the seminar. The speaker, a 39 year old male university professor, is a balanced German-Italian early bilingual speaker. He was born in Germany to Italian immigrant parents and was educated in German until the end of his university schooling. In addition to Italian and German, both mastered at the C2 level of the Common European Framework, the speaker has also acquired, through formal education, a certified mastery of the English language at the C1 level. During the seminar, the speaker used

³ Veronesi / Spreafico (2009, 2012) include a discussion of the structure of the interaction during the seminar, especially regarding language alternation and choice.

each of the three languages for almost the same amount of time to coordinate the interaction as well as to present his ideas and discuss them.

3.4. *Procedure*

In order to test the question of the language specificity of FPs, the similarities and differences of FPs are investigated using an acoustic approach (Pompino-Marshall 2004; Pompino-Marshall / Kowal / O'Connell 2007). The phonetic description of FPs is achieved through the adoption of a semasiological approach. This includes the analysis of FPs that only signal hesitation and, in each of the three considered languages, would be transcribed with the same graphematic sequence, for example, <uh(m)> in English, <äh(m)> in German, and <eh(m)> in Italian. Certain instances of these FPs were eventually extracted from the transcriptions and then analysed using the PRAAT acoustic analysis software (Boersma / Weenink 2016).

3.4.1. *Identification of FPs*

Giannini (2003), apparently the only contribution devoted to the instrumental study of FPs in Italian, criticizes the tendency to compare objects drawn from data of differing natures and with different methodologies. Hence, before presenting the results of the analysis, certain methodological problems connected with the organisation of the data are discussed. In particular, those problems allowed us to identify how, no matter how apparently trivial, the transcription and selection of the FPs for inclusion in the analysis presented difficulties that were not always easy or obvious to resolve.

The first problem was due to the correct identification of the FPs. In fact, it is fundamental to ensure that what is presumed to be a FP, or a verbal element intended to indicate hesitation or to ensure the preservation of the speech turn, is actually that; otherwise, the results will be unreliable. At the same time, it is essential to exclude an item suspected of belonging to another part of speech. In this sense, the data analysed unfortunately presented a number of ambiguous cases. They are evident, in Italian (Example 1) by occurrences that may be linked to a verbal form such as the third person singular of the present indicative of the Italian verb 'to be' (*essere*), which is 'è', and whose phonetic form /ɛ/ is

similar to that of the typical Italian FP /ɛ:/ (Poggi 2001); or in English (Example 2) with the indefinite article 'a', pronounced as /ə/; or also in German (Example 3) when prepositions are merged with the definite article, such as with 'am', whose phonetic form is /am/.

- (1) *l'attenzione del semestre è un po' calata↓ (0.8) e proprio è {è∨&}*
la: la giornata di oggi.
- (2) *normally & represent also {a:∨&} & so kind of actions.*
- (3) *wir kommen hier {a:/ ∨ &} wir kommen hier a/ am montag.*

Moreover, in many cases, the evaluation of ambiguous forms was complicated not only by the combination of factors, such as the presence of final elongations or the absence of a syntactic framework which would enable the ambiguity to be solved, but also by the presence of pronunciations that were partially divergent from the expected norm, particularly in English, due to the subject's non-native competence.

The second problem was related to the difficulty in distinguishing FPs from other forms of hesitation such as false starts or stretching the ends of words. For the purposes of this research, false starts (Peters / Menn 1993) are not considered therefore were excluded from the analysis, as they have all the acoustic items similar to FPs but are immediately followed by the recovery of an element initially dropped, as in the case of *a/ am* illustrated in (3)⁵. The stretching of words was more difficult to address because, in the absence of significant differences in timbre, it makes it impossible to determine where the elongation phase of the final sound of the word ends and where the FP actually begins (Example 4).

- (4) *quindi così non va più avanti inoltre & ho ho {la:∨la &}*
chiara sensazione.

⁴ For reasons that will become clear later, for the transcription in ELAN of the FPs, we preferred to deviate from the standard spelling of each of the three languages and to always mark each FP with <&> or each FP with a vowel followed by a nasal with <&m>. The symbol of the inclusive disjunction ∨ indicates here that the first of the two forms between braces may be analysed as a FP.

⁵ The first use of *a/*, as observed as Example 3, could also be understood to be a false start; however, because the element is not immediately followed by its recovery but by the recovery of the entire utterance *wir kommen hier a/ am Montag*, it was decided to classify it as a FP and therefore to transcribe it as &.

For this reason, it was decided that only the phonetic materials situated between two silent pauses would be considered as a FP. This decision greatly simplified certain phases of the analysis, particularly those for measuring, which alone are not devoid of problems.

3.4.2. *Measurement of FPs*

FPs can be constituted by a vowel sound or by a more complex sequence, such as with a vowel sound and a nasal sound⁶. In the first case, the FP's duration did not present any problems. The points at which the measurement started and finished were made to coincide with the segment boundaries, including between the preceding silent pause and the subsequent silent pause. However, in the second case, the operation was more complex, particularly because it was always complicated by the presence of formant movements due to transition phenomena between the vowel sound and the consonant sound.

Therefore, it was deemed preferable to identify the duration of the sole stable phase of the vowel portion of the FP, which is occasionally known in literature as the 'vocalic support' of the FP (Clerc-Renaud *et al.* 2004; Vasilescu / Candea / Adda-Decker 2005). For the estimation of formant frequencies, the same principle was followed; allowing for the average value for the entire duration of the vocalic support to be sampled. Given the stability of F1 and F2, which is significant in itself, we avoided taking the formant values in the central point of the stable phase or at two-thirds of the same, as is the usual practice. This approach enabled consideration of minor changes that might occur to vowel formants and inaccuracies due to the selected formant frequency estimation method. The operation was facilitated by the absence in the FPs considered of nasalisation or diphthongisation phenomena, which characterize the fillers of other languages, such as Portuguese (Vasilescu / Adda-Deker 2007).

⁶ Here, there are also certain transcription differences. For the consequences, from a lexicological view, of the presence of FPs in several languages with and without the nasal component and, in particular, for the differences in use between the two types of fillers, refer to Clark / Fox Tree (2002), as well as the criticisms of this work presented in Corley / Stewart (2008).

3.4.3. Language attribution of FPs

The third important methodological problem did not concern the identification of the FPs, but rather how to assign these to one of the three languages used by the informant during the interaction. This is an important point because the intention is to make an interlinguistic and intralinguistic comparison of the acoustic properties of FPs. Because the data sample analysed is characterised by frequent code-switching and by continuous alternations between German, Italian and English, FPs often straddle the forms belonging to two different languages (as shown in Figure 1); therefore, it is difficult to determine which of the two codes the FP should be linked to.

In the absence of viable alternatives, it was decided to adopt a purely positional criterion and therefore to assign the FP to the most frequent language represented by the five previous lexical units and the four following lexical units, as shown in Figure (1). This figure shows that the FP with nasal &m was classified with those of Italian because it was included in a context characterised by the presence of four German words and five Italian words.

| | | | | | | | | | | | |
|--------------------------|------------|------------|--------------------|-------------|---------------|---------------|-----------|-------------|---------------|-----------|----------------------------|
| <i>oder ich sag'</i> | <i>das</i> | <i>auf</i> | <i>italienisch</i> | <i>oke?</i> | <i>allora</i> | <i>&m</i> | <i>lo</i> | <i>dico</i> | <i>ancora</i> | <i>in</i> | <i>italiano per essere</i> |
| | 5 | 4 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | 4 | |
| | Ger | Ger | Ger | Ger | Ita | | Ita | Ita | Ita | Ita | |
| | | | | | | ITA | | | | | |

Figure 1. Classification of FPs, positional criterion.

Ger = German; Ita = Italian

In determining the number of units around the FP, the presence of any other FPs was not taken into account, as they were not counted as in the case of &m shown in Figure (2) and ignored for the purposes of classifying &. In addition, it was decided to count idioms, such as: *patti chiari amicizia lunga* 'good agreements make good friends', and *bambino avvisato mezzo salvato* 'forewarned is forearmed' (Figure 2), as a single occurrence because they are possibly stored in the mental lexicon

as holistic entries (Caillies / Butcher 2007) and because they have relatively fixed, uninterruptible prosodic patterns (Ashby 2006).

| | | | | | | | | | | | |
|------------|----------------|-------------|-----------|--------------------|--|--------------|------------|---------------|------------------|---------------|---|
| <i>Ein</i> | <i>schönes</i> | <i>wort</i> | <i>im</i> | <i>italienisch</i> | <i>patti chiari amicizia lunga</i> | <i>&</i> | <i>wie</i> | <i>gesagt</i> | <i>überhaupt</i> | <i>&m</i> | <i>bambino avvisato mezzo salvato</i> |
| | 5 | 4 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | | 4 |
| | Ger | Ger | Ger | Ger | Ita | | Ger | Ger | Ger | | Ita |
| | | | | | | GER | | | | | |

Figure 2. Classification of FPs, positional criterion.

Ger = German; Ita = Italian

The conservative criteria discussed above, enabled us to limit the proportion of confused data in the analysis.

4. *Analysis*

4.1. *Frequency and length of FPs*

Applying the criteria established in the preceding sections to a portion of the sample, which was approximately twenty minutes of actual speech, computed with respect to what was actually uttered and excluding from the count any silent pauses longer than 200 milliseconds, has allowed us to identify 67 FPs in English, 39 FPs in German, 35 FPs in Italian and to obtain the values shown in the Table below.

The data obtained has allowed us to observe that the incidence of FPs in the total quantity of speech is lower than that reported by other authors (MacLay / Osgood 1959 claim that FPs can occupy a share of between 6% and 15% of the total speech used in spontaneous conversation). This might be explained by the fact that in his role as leader of the interaction, the speaker does not need to use FPs to hold the floor, or he might use other strategies.

The incidence of FPs in the speech is not constant for the three languages used by the speaker. In fact, as shown in the third row [% OF THE

| | | German | English | Italian |
|----------------------------------|----------|---------------|----------------|----------------|
| Occurrences (n) | | 39 | 67 | 35 |
| Effective length of speech (min) | | 5.7 | 5.9 | 3.5 |
| % of the total amount of speech | | 1.95 | 3.82 | 2.98 |
| % of the total no. of tokens | | 3.04 | 5.35 | 3.74 |
| Average length (s) | | 0.174 | 0.203 | 0.178 |
| F1 (Hz) | average | 626.834 | 662.447 | 639.475 |
| | σ | 60.741 | 66.272 | 59.474 |
| F2 (Hz) | average | 1587.753 | 1531.075 | 1472.217 |
| | σ | 155.972 | 125.244 | 131.915 |

Table 1. Values obtained

TOTAL AMOUNT OF SPEECH], in German, FPs are slightly less than 2% of the total speech; in Italian, they are close to 3%; and in English, they are nearly 4%. The trend to have a greater number of FPs when utterances are in English compared to German and Italian is also confirmed by the ratio between the frequency of FPs and the total number of tokens shown in the row [% OF THE TOTAL NO. OF TOKENS].

These data, if observed together with those in the row [AVERAGE LENGTH (s)], are evidence of less familiarity with the English language, which, as already reported, constitutes a sort of L3 (De Angelis 2007) for the speaker. This is particularly true if one were to assume that the average length of the pause is directly related to the cognitive processing time required to retrieve an element from the mental lexicon or to plan an utterance.

4.2. Formant values of FPs

The lines that correspond to the formant values of the FPs [F1 (Hz), F2 (Hz)] as extracted using PRAAT (formant settings: time step = 0.0; maximum number of formants = 5; maximum formant = 5000 Hz), allow us to establish whether there are timbre differences in the FPs in Italian, German and English or whether they are, at least in acoustic terms, language-specific.

The average values shown in the Table immediately allow us to observe certain differences, for example, those related to the F1 values of German and Italian are similar to each other but distinct from those of English; or those related to the F2 values of German and English, on the one hand, and Italian, on the other. These differences are enhanced by the graphical representation of the data (Figure 3), which also allows us to appreciate the real distribution of the values which are substantially normal for each of the two dimensions (F1 and F2) in each of the languages as confirmed by a KS-test⁷.

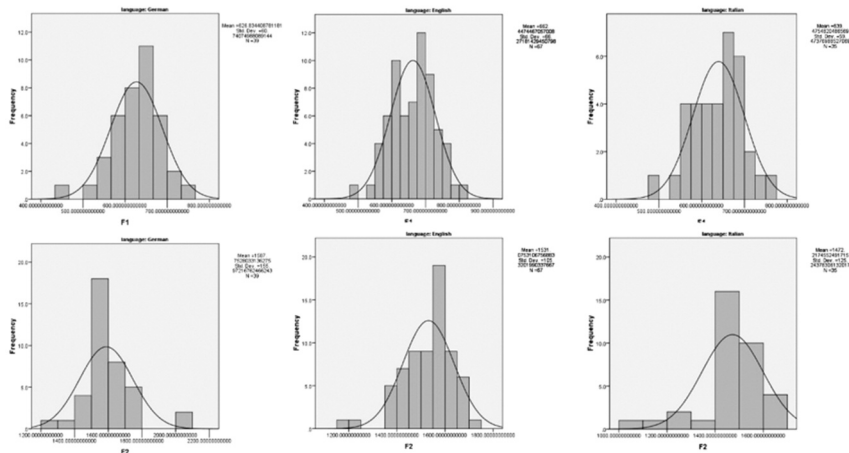


Figure 3. Distribution of the F1 and F2 values for each language (German, English, and Italian)

⁷ The values for the one-sample Kolmogorov-Smirnov test for respectively F1 and F2 are .891 and .239 (English); .912 and .073 (German); .955 and .229 (Italian). All statistical analyses are carried out using SPSS.

This normal distribution allows us to run a one-way ANOVA on the sample; in other words, compare the (average) internal variability within the groups with the (absolute) variability to determine whether the differences observed are random or statistically significant. The result (Figure 4) is positive for both the F1 values [$F(2,138) = 4.2$, $p = 0.16$] and the F2 values [$F(2, 138) = 7.7$, $p = 0.001$], that is, the acoustic correlates for tongue advancement and retraction.

| | | SUM OF SQUARES | DF | MEAN SQUARE | F | SIG. |
|----|----------------|----------------|-----|-------------|-------|------|
| F1 | BETWEEN GROUPS | 33827.255 | 2 | 16913.628 | 4.241 | 0.16 |
| | WITHIN GROUPS | 550329.989 | 138 | 3987.898 | | |
| | TOTAL | 584157.244 | 140 | | | |
| F2 | BETWEEN GROUPS | 246369.418 | 2 | 123184.709 | 7.763 | .001 |
| | WITHIN GROUPS | 2189856.951 | 138 | 15868.529 | | |
| | TOTAL | 2436226.369 | 140 | | | |

Figure 4. ANOVA results

The statistical distribution of the data, and, particularly, of the F2 values for German, also legitimates the application of the nonparametric Mann-Whitney test; because of this, it is possible to test (Figure 5) whether the observed differences between the groups (German, Italian, and English) of data pairs (F1, F2) are, once again, random or statistically significant. The implementation of the test enables us to compare the sound of the Italian FPs with those of the German and English FPs. The results show that the relative average variance mainly affects German and Italian, that is, the FPs of these two languages are the most acoustically different among the three, certainly more than the those of English pauses.

Thus, the acoustic analysis of the data collected shows that the timbre differences between the FPs in the three languages are statistically significant and that the informant produces FPs of different types: one specific to German, the other to Italian and another one to English. However, the English FPs are, in certain aspects, similar to those of the German; in fact, statistically, they are less different (Figure 5), mainly because of the proximity of the F2 values (Table 1).

| GROUPING VARIABLE: LANGUAGE GERMAN/ITALIAN | | | GROUPING VARIABLE: LANGUAGE GERMAN/ENGLISH | | GROUPING VARIABLE: LANGUAGE ITALIAN/GERMAN | |
|---|----------|---------|---|----------|---|----------|
| | F1 | F2 | F1 | F2 | F1 | F2 |
| MANN-WHITNEY U | 610.000 | 337.000 | 922.000 | 1043.000 | 930.000 | 841.000 |
| WILCOXON W | 1390.000 | 967.000 | 1702.000 | 3321.000 | 1560.000 | 1471.000 |
| Z | -.785 | -3.741 | -2.519 | -1.726 | -1.709 | -2.337 |
| ASYMP. SIG. (2- TAILED) | .432 | .000 | .012 | .084 | .087 | .019 |

Figure 5. Mann-Whitney test results for the following pairs:
German/Italian; German/English; Italian/English

The analysis also shows how significant the internal oscillations can be in the speaker's productions in the same language (refer to Figure 6 where F1 is plotted against F2 as well as the standard deviation value for F1 and F2 in the three languages reported in Table 1), which confirms a trend observed in the literature (de Leew 2007).

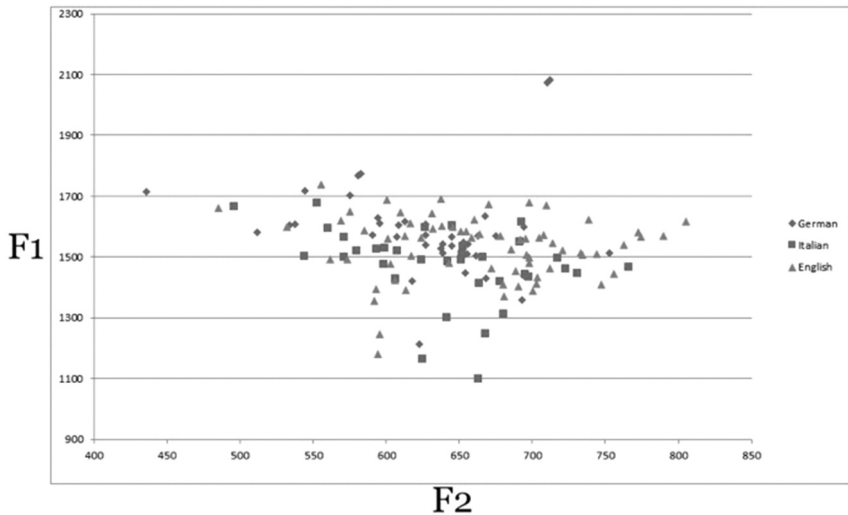


Figure 6. Frequencies (Hz) of the first and second formants of FPs for each language of the study

However, part of this variation appears to be due to the presence of strongly deviant FPs, especially in the vicinity of the transition points between languages, as shown in example (5), where the F1 and F2 measurements for the FPs produce values of 788.43 Hz and 1603.88 Hz, respectively. These measurements are dramatically higher than the average for Italian (the language in which & was recorded given the linguistic context, defined as explained in §3.4.3).

- (1) *ist es oke wenn ich; allora ↓ &: lo dico ancora in italiano*
per essere un po' più/ chiarissimo

This considerable variation would nearly appear to show that the proximity to the change of language generates an instability in the FP and makes it neither a characteristic of the language preceding it nor of the one following it. On the contrary, the stability of the phonetic substance of the FP in the sequences with a strictly monolingual surround confirms the language-specific nature of the FP.

5. *Conclusions*

The results of the analysis enable us to affirm that the multilingual speaker considered in this study makes language-specific use of FPs, that is, the speaker reproduces the trend, previously verified using data from monolingual speakers, to select FPs for each of the spoken languages. This finding is in accordance with previous instrumental analysis (de Leeuw 2007) and largely impressionistic research (Clark / Fox-Tree 2002; Levelt 1983; Maclay / Osgood 1959) on speakers of different languages. The language-specific nature of the FPs identified, which correlates with findings on the language-specificity of articulatory settings (Gick / Wilson / Koch / Cook 2004), is of extreme interest in the conversational sphere. Indeed, in contexts in which multilingual interaction occurs, in addition to being a means to signal the planning process of discourse or the searching for a word, FPs can also be assumed to be a sign of a translating process or as a selection and change of language. Thus, FPs would also have cue potential for listeners and be a valuable interaction tool in the explicit processes of language negotiation (Auer 2002).

The statistical analyses of acoustic values presented in this study, although testifying to differences between the various FPs, do not allow us to derive any conclusions regarding their *perceived* significance. This finding is a fundamental aspect if there is to be an investigation to evaluate the possible functions and consequences of such differences for an interaction in terms of managing code-switching.

The processed data are also useful as a contribution to the discussion concerning the lexical nature of FPs. However, although not enabling us to resolve the issue unequivocally by stating that it is a question of words, the presence of a language-specific and stable significance in each language and the apparent presence of an interactional meaning that can be associated to it enables us to at least reject these elements as being non-linguistic.

Lorenzo Spreafico
Libera Università di Bolzano
ALPS - Alpine Laboratory
of Phonetic Sciences
lorenzo.spreafico@unibz.it

References

- Abou-Zleikha, Mohamed / Tan, Z. / Christensen, Mad / Jensen, Søren, 2014, “Non-linguistic vocal event detection using online random forest”. *Proceedings of the 37th MIPRO*: 1326-1330.
- Ameka, Felix, 1992, “Interjections: The universal yet neglected part of speech”. *Journal of Pragmatics* 18, 101-118.
- Amiridze, Nino / Davis, Boyd / MacLagan, Margaret, 2010, *Fillers, pauses and placeholders*. Amsterdam, Benjamins.
- Ashby, Michael, 2006, “Prosody and idioms in English”. *Journal of Pragmatics* 38, 1580-1597.
- Auer, Peter, 1984, *Bilingual conversation*, Amsterdam, Benjamins.
- Auer, Peter, 2002, *Code-switching in conversation: Language, interaction and identity*, London, Routledge.
- Bazzanella, Carla, 1994, *Le facce del parlare*, Scandicci, La Nuova Italia.
- Berruto, Gaetano, 2010, “Lessico: le strutture”. In Laudanna, Alessandro / Voghera, Miriam (a cura di), *Il linguaggio*, Bari, Laterza: 140-148.

- Boersma, Paul / Weenink, David, 2016, *Praat: doing phonetics by computer* (Version 5,1,07). <http://www.praat.org/>.
- Bloomfield, Leonard, 1933, *Language*, Chicago, IL, University of Chicago Press.
- Brennan, Susan / Schober, Michael, 2001, "How listeners compensate for disfluencies in spontaneous speech". *Journal of Memory and Language* 44: 274-296.
- Caillies, Stéphanie / Butcher, Kirsten, 2007, "Processing of idiomatic expressions: Evidence for a new hybrid view". *Metaphor and Symbol* 22, 79-108.
- Candea, Maria / Vasilescu, Ioana / Adda-Decker, Martine, 2005, "Inter- and intra-language acoustic analysis of autonomous fillers". *DISS05, Disfluency in spontaneous speech workshop*: 47-52.
- Clark, Herbert / Fox-Tree, Jean, 2002, "Using uh and um in spontaneous speaking". *Cognition* 84: 73-111.
- Clerc-Renaud, Jeanne / Vasilescu, Ioana / Candea, Maria / Adda-Decker, Martine, 2004, "Etude acoustique et perceptive des hesitations autonomes multilingues". *Actes des 25ème Journées d'Etudes sur la Parole*. Retrieved from http://www.cavi.univ-paris3.fr/ilpga/pages_personnelles/maria_candea/section3.html.
- Corley, Martin / Stewart, Oliver, 2008, "Hesitation disfluencies in spontaneous speech: The meaning of um". *Language and Linguistics Compass* 4: 589-602.
- Dalton, Peggy / Hardcastle, William, 1989, *Disorders of fluency and their effects on communication* (2nd Edition), London, Cole and Whurr.
- De Angelis, Gessica, 2007, *Third or additional language acquisition*, Clevedon, Multilingual Matters.
- De Leeuw, Esther, 2007, "Hesitation markers in English, German and Dutch". *Journal of Germanic Linguistics* 1, 85-114.
- Ehlich, Konrad, 1986, *Interjektionen*, Tübingen, Max Niemeyer.
- Fraser, Bruce, 1996, "Pragmatic markers". *Pragmatics* 6: 167-190.
- Gafaranga, Joseph, 1999, "Language choice as a significant aspect of talk organisation". *Text* 19, 201-226.
- Gafaranga, Joseph, 2007, *Talk in two languages*, Basingstoke, Palgrave.
- Giannini, Antonella, 2003, "Hesitation phenomena in spontaneous Italian". *Proceedings of the XV ICPhS*: 2653-2656.
- Gick, Brian / Wilson, Ian / Koch, Karsten / Cook, Claren, 2004, "Language-specific articulatory settings: Evidence from inter-utterance rest position". *Phonetica* 61: 220-233.
- Goffman, Ervin, 1978, "Response cries". *Language* 54: 787-815.

- Goldman-Eisler, Frieda, 1968, *Psycholinguistics: experiments in spontaneous speech*, London, Academic Press.
- Honikman, Beatrice, 1964, "Articulatory settings". In Abercrombie, David (Eds.) *In Honour of Daniel Jones*, London, Longmans, Green & Co: 73-84.
- Jefferson, Gail, 1983, "On a Failed Hypothesis: 'Conjunctionals' as overlap-vulnerable". *Tilburg Papers in Language and Literature* 28: 1-33.
- Jefferson, Gail, 2004, "Glossary of transcript symbols with an introduction". In Lerner, Gene (Eds.) *Conversation Analysis: Studies from the first generation*, Amsterdam, John Benjamins: 13-31.
- Kowal, Sabine / O'Connell, Daniel, 1993, "Television rhetoric in an age of secondary orality: Psycholinguistic analyses of the speaking performance of Ronald Reagan". *Georgetown journal of languages and linguistics* 1: 174-185.
- Levelt, Willem, 1983, "Monitoring and self repair in speech". *Cognition* 14: 41-104.
- Levelt, Willem, 1989, *Speaking: From intention to articulation*, Cambridge, MA, MIT Press.
- Maclay, Howard / Osgood, Charles, 1959, "Hesitation phenomena in spontaneous English". *Word* 15: 19-44.
- Norrick, Neal, 2009, "Interjections as pragmatic markers". *Journal of Pragmatics* 41: 866-891.
- Nübling, Damaris, 2004, "Die prototypische Interjektion". *Zeitschrift für Semiotik* 26: 11-46.
- O'Connell, Daniel / Kowal, Sabine, 2004, "The history of research on the FP as evidence of the written language bias in linguistics (Linell, 1982)". *Journal of Psycholinguistic Research* 33: 459-474.
- Peters, Ann / Menn, Lise, 1993, "False starts and filler syllables: ways to learn grammatical morphemes". *Language* 69: 742-777.
- Poggi, Isabella, 1981, *Le interiezioni*, Torino: Boringhieri.
- Poggi, Isabella, 2001, "Le interiezioni". In Renzi, Lorenzo / Salvi, Giampaolo / Cardinaletti, Anna (a cura di), *Grande grammatica italiana di consultazione. Vol. III, Tipi di frase, deissi, formazione della parole*, Bologna, il Mulino: 403-426.
- Pompino-Marschall, Bernd, 2004, "Zwischen Tierlaut und sprachlicher Artikulation: Zur Phonetik der Interjektionen". *Zeitschrift für Semiotik* 26: 71-84.
- Pompino-Marshall, Bernd / Kowal, Sabine / O'Connell, Daniel, 2007, "Some phonetic notes on emotion: Laughter, interjections, and weeping". *Interdisciplinary workshop on the phonetics of laughter*: 41-42.

- Rochester, Sherry, 1973, "The significance of pauses in spontaneous speech". *Journal of Psycholinguistic Research* 2: 51-81.
- Sacks, Harvey, 1992, *Lectures on conversation*, Malden, MA, Blackwell.
- Schachter, Stanley / Christenfeld, Nicholas / Ravina, Bernard / Bilous, Frances, 1991, "Speech disfluency and the structure of knowledge". *Journal of Personality and Social Psychology* 60: 362-367.
- Schachter, Paul / Shopen, Timothy, 2007, "Parts-of-speech systems". In Shopen, Timothy (Eds.), *Language typology and syntactic description, vol. 1: Clause structure*. Second edition, Cambridge, MA, Cambridge University Press: 1-60.
- Vasilescu, Ioana / Candea, Maria / Adda-Decker, Martine, 2005, "Perceptual salience of language-specific acoustic differences in autonomous fillers across eight languages". *Interspeech 2005*: 1773-1776.
- Vasilescu, Ioana / Adda-Decker, Martine, 2007, "A cross-language study of acoustic and prosodic characteristics of vocalic hesitations". In Esposito, Anna / Bratanić, Maja / Keller, Erica / Marinaro, Maria (Eds.), *Fundamentals of verbal and nonverbal communication and the biometric issue*, Amsterdam, IOS Press: 140-148.
- Veronesi, Daniela / Spreafico, Lorenzo, 2009, "Between mono- and multilingualism in the classroom: communicative practices in a trilingual university". *Proceedings of the International Festschrift Symposium for Paul N. Mbangwana: Language, Literature and Nation Building*: 199-235.
- Veronesi, Daniela / Spreafico, Lorenzo, 2012, "La gestion de la participation dans deux séminaires académiques plurilingues". In Mondada, Lorenza / Nussbaum, Lucy (Eds.), *Interactions cosmopolites: l'organisation de la participation plurilingue*, Limoges, Editions Lucas Lambert: 133-168.
- Ward, Nigel, 2006, "Non-lexical conversational sounds in American English". *Pragmatics and Cognition* 14: 113-184.
- Wierzbicka, Anna, 1992, "The semantics of interjection". *Journal of Pragmatics* 18: 159-192.
- Wilkins, David, 1992, "Interjections as deictics". *Journal of Pragmatics* 18: 119-158.
- Wittenburg, Peter / Brugman, Hennie / Russel, Albert / Klassmann, Alex / Sloetjes, Han, 2006, "ELAN: a professional framework for multimodality research". In: *Proceedings of LREC 2006, Fifth International Conference on Language Resources and Evaluation*. 1556-1559.