



Regional variation and articulation rate in French



Sandra Schwab^{a,*}, Mathieu Avanzi^b

^a *École de langue et de civilisation françaises, Université de Genève, 5, Rue de Candolle, 1211 Genève 4, Switzerland*

^b *Institut des Sciences du Langage et de la Communication, Faculté des Lettres et Sciences Humaines, Ruelle Vaucher 22, Université de Neuchâtel, Switzerland*

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ABSTRACT

The present investigation deals with regional variation and articulation rate in French. The articulation rate in read speech and in spontaneous speech was examined in seven variants of French: Paris and Lyon in France; Tournai and Liège in Belgium; Geneva, Neuchâtel and Nyon in Switzerland. Results showed that Swiss speakers articulate at a lower syllable rate than French speakers (especially Parisian speakers) and Belgian speakers, independently of the speaking style (reading or conversation). This finding confirms that articulation rate varies regionally. Moreover, results revealed that extra-linguistic and linguistic factors, such as the speaker's age and gender, the speaking style, the utterance length and the articulation rate of the adjacent inter-pause chunk, also affect articulation rate.

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1. Introduction

Articulation rate (henceforth AR) is one of the most commonly used variables for measuring the tempo of a given utterance. It is also the variable on which listeners mainly rely to perceptually evaluate the pace at which an utterance is produced (Koreman, 2006; Lane & Grosjean, 1973). In fact, AR refers to the number of units (e.g. syllables, phones) produced in a specific time, excluding pauses. It is generally expressed in syll/sec (Grosjean & Deschamps, 1975) or in ms/syll (Miller, Grosjean, & Lomanto, 1984; Quené, 2008).

The factors that affect AR are numerous (Quené, 2008; Schwab, 2007). For example, it is known that the speakers' age and gender have an influence on AR: young speakers articulate faster than older speakers, and males articulate faster than females (Jacewicz, Fox, O'Neill, & Salmons, 2009; Quené, 2008; Schwab & Racine, 2012; Smith, Wasowicz, & Preston, 1987; Verhoeven, De Pauw, & Kloots, 2004). AR also varies as a function of the speaking style. It has been claimed that AR is faster in reading than in conversation (Grosjean & Deschamps, 1975; Lucci, 1983). However, some studies present an inverse tendency (Avanzi, Schwab, Dubosson, & Goldman, 2012; Crystal & House, 1990; Woehrling, Boula de Mareüil, & Adda-Decker, 2008). Moreover, it has been shown that the length of the utterance affects AR (Bartkova, 1991; Quené, 2008): the longer the utterance, the faster the AR.¹ Finally, AR may depend on the speaker's regional variant (e.g. Jacewicz, Fox, & Wei, 2010, for American English; Verhoeven et al., 2004 and Quené, 2008, for Dutch). As far as variants of French are concerned, AR is still an issue under debate.

Native speakers of French from France tend to perceive Belgian and Swiss French speakers' tempo as slower than their own. Such a perceptual stereotype is reported in almost all the studies and handbooks describing the French spoken in Belgium and Switzerland (Klinkenberg, 1999; Knecht & Rubattel, 1984; Remacle, 1969; Singy, 2004; Warnant, 1997). Yet, to our knowledge, the question whether Belgian and Swiss speakers of French actually speak slower than speakers of Standard French² is still

* Corresponding author.

E-mail addresses: Sandra.Schwab@unige.ch (S. Schwab), Mathieu.Avanzi@unine.ch (M. Avanzi).

¹ What Quené (2008) calls the "anticipatory effect".

² The notion of Standard French will not be addressed in this paper. For our purpose, Standard French refers to the variant of French transmitted by the media, and spoken in the non-peripheral parts of the Oïl and the Franco-Provencal areas of Metropolitan France (Boula de Mareüil, Adda-Decker, Woehrling, Bardiaux, & Simon, 2012; Lyche, 2010; Serfling Miller, 2007; Racine, Schwab, & Deteay, 2013).

unanswered. Many scholars have addressed this issue by comparing the AR of native French speakers from different French-speaking areas. As described below, their results have led to contradictory conclusions.

As far as the Belgian variants are concerned, little work has been dealing with temporal variables (see nevertheless Bardiaux, Simon, & Goldman, 2012; Boula de Mareüil, Adda-Decker, Woehrling, Bardiaux, & Simon, 2012; Goldman & Simon, 2007; Schwab, Avanzi, Goldman, Dubosson, Bardiaux, 2014). Taken together, these studies show that, contrary to common belief, the AR of Belgian speakers of French³ does not physically differ from the AR of Standard French speakers. Yet, it is important to note that these studies, except Boula de Mareüil et al. (2012), were performed on read speech only.

Regarding the Swiss variants, studies are less recent and more numerous, and have led to more variable results. Schoch, Jolivet, & Mahmoudian (in Mahmoudian & Jolivet, 1984) compared the AR in conversation of 40 speakers from the Vaud Canton in Switzerland with the AR of 30 Parisian speakers, and found no significant differences. These results are confirmed by Sertling Miller (2007), who reported no significant differences between the AR (in reading) in six Swiss speakers (3 males and 3 females from Nyon, a city located in the Vaud Swiss canton; aged from 19 to 35 years) and six speakers originating from the various cities located in the Oïl area of France (3 males and 3 females aged from 22 to 40 years). Goldman and Simon (2007) compared the AR in reading of 11 speakers from Lyon (in France) and 12 speakers from Tournai (in Belgium) with the AR of 12 speakers from Nyon (in Switzerland) and 12 speakers from Liège (in Belgium), and found no significant differences between what they considered as the Standard variants (Lyon and Tournai) and the regional variants (Nyon and Liège), but no details were given regarding the differences between Lyon and Nyon.

On the other hand, the conclusion that the AR in the Swiss variants (i.e. Vaud) is similar to the French Standard variants is not supported by recent studies (Avanzi et al., 2012; Boula de Mareüil et al., 2012; Schwab & Racine, 2012; Schwab et al., 2014). Taken together, the results show significant differences between speakers of Standard French and speakers from Switzerland (Geneva, Nyon, and Neuchâtel): Swiss speakers articulate at a lower syllable rate than Standard French speakers, in read speech as well as in conversation. It was also found that Swiss speakers present a slower AR than Belgian speakers, at least in read speech.

The discrepancies we observe in the reported studies can be explained by the fact that the speakers' age and gender were not systematically controlled, or, if controlled, were not considered as factors in the statistical analyses (e.g. Goldman & Simon, 2007; Sertling Miller, 2007), despite their known impact on AR. Moreover, most of the studies only examined read speech (e.g. Sertling Miller, 2007), while others also took into account conversational speech (e.g. Avanzi et al., 2012).

2. Research questions

While Avanzi et al. (2012) examined the AR of some Swiss regional variants and Parisian French in reading and conversation, and Schwab et al. (2014) studied the AR of some Swiss, Belgian variants and Parisian French in reading only, we investigate, in the present research, the AR of some Swiss, Belgian regional variants and Parisian French in reading and conversation. More precisely, the present investigation focuses on the effect of the speaker's regional variant on AR in French by taking into account not only extra-linguistic factors such as the speaker's age and gender but also linguistic factors, such as the length of the utterance, the articulation rate of the preceding utterance and the speaking style. Given that the read speech may involve more standardized productions, and thus might hide the effects of the regional variant (Simon, 2004), we consider read speech as well as spontaneous speech.

More specifically, our research questions are the following: (1) Do Swiss and Belgian speakers of French articulate slower than Standard French speakers? (2) Is AR different between regional variants within the same country? (3) Which role do gender and age play for AR? (4) To what extent do linguistic factors such as the length of the utterance and the speaking style have an effect on AR? (5) Is the articulation rate related to the articulation rate of the preceding utterance?

3. Method

The material we used consisted in speech samples extracted from the PFC database (Durand, Laks, & Lyche, 2002, 2009). The selection (regional variants and speakers) and the processing (transcription, alignment, labeling, etc.) of these speech samples were carried out for a project dealing with stylistic and regional variation of European French accentuation and phrasing (see Avanzi, 2013, for a detailed description).

3.1. Selection of the speech samples

As far as the variants from France were concerned, we selected speech samples from Paris and Lyon, since these variants are considered to be representative of Standard French (e.g. Boula de Mareüil et al., 2012; Goldman & Simon, 2007; Woehrling & Boula de Mareüil, 2006; Woehrling et al., 2008). Regarding the Belgian and Swiss variants, we considered the variants which were examined in the studies mentioned in the Introduction: Tournai and Liège (in Belgium), Neuchâtel and Nyon (in Switzerland). We also added Geneva (in Switzerland), which is located at the border between Switzerland and France. The selection of these variants was also motivated by the results of perceptual studies conducted on Belgian variants (Bardiaux et al., 2012; Boula de Mareüil &

³ The Belgian speakers of these studies originate from Tournai (a city located on the Belgium/France border), Brussels (the capital of Belgium), Liège and Gembloux (two cities located in the East side and in the center of the French-speaking part of Belgium).

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