approximantic [ɹ]. The speaker from Floby never produced a trill, but shifted between a tap [ɾ] (in stressed position) and an approximant [ɹ].

As the Korsberga speaker was alone in his use of a uvular in focused position there is no need to separate him further. His uvular variant is pronounced as a trill though, while the alveolar variants are either tapped or approximantic.

4 Conclusions and future work

The uvular [ʀ] is less used in the Västgöta dialect, at least in the sparse data used for this study. This might mean that it has transformed into an already existent alveolar after short stressed vowels and is slowly disappearing as a word (or morpheme) initial as well.

By aural and spectrographic examination leading to a narrow transcription and phonological rules, it was easy to separate the speakers. More research on how well a larger group can be separated using this method is recommended. Several aspects of interspeaker variation were left out using a small amount of data. Including more acoustic measurements, such as spectral studies of /r/ for different speakers, should also be investigated in the future.

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Preliminary Descriptive F0-statistics for Young Male Speakers

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Abstract

This paper presents preliminary descriptive statistics for 109 young male speakers' fundamental frequency. The recordings were taken from the Swedia dialect database with speakers from different geographical areas of Sweden. The material consisted of spontaneous speech ranging between seventeen seconds and approximately two minutes. F0 mean, median, baseline and standard deviation distributions in Herz are described using histograms. It is suggested to use median instead of mean when measuring F0 in for example forensic cases since it is more robust and not as affected by octave jumps.

1 Background and introduction

1.1 Why young male speakers?

Young males aged 20-30 were chosen as a group because they exist as such in the Swedia database (<http://www.swedia.nu>) and because they stand for 62% of the convicted criminals in Sweden last year (<http://www.bra.se>), which was important due to the forensic implications of the descriptive statistics.

1.2 F0 and forensic phonetics

The within-speaker variation in F0 is affected by an enormous amount of factors. In Braun (1995), she categorizes them as technical, physiological and psychological factors. Tape speed, which surprisingly still is an issue for forensic samples, and sample size are examples of technical factors. Smoking and age are examples of physiological, while emotional state and background noise are examples of psychological factors. However, fundamental frequency has been shown to be a successful forensic phonetic parameter (Nolan, 1983). To be able to study differences it is suggested to use long-term distribution measures such as arithmetical mean and standard deviation (Rose, 2002). The duration of the samples should be more than 60 seconds according to Nolan (1983), but Rose (1991) reports that F0 measurements for seven Chinese speakers stabilised much earlier, implying that the values may be language specific (Rose, 2002). Positive skewing of the F0 distribution is typical (Jassem et al., 1973) and an argument for considering a base value (F_b) for F0 (Traunmüller, 1994). This base value is also described here together with mean, median and standard deviation for the whole group. There are no Swedish statistics on F0 found after Kitzing (1979), where he reports a mean of 110.3 Hz and a standard deviation of 3 semitones (in Traunmüller & Eriksson, 1995a) for 51 male speakers ranging between 21-70 years of age.

2 Method

The software Praat (Boersma & Weenink, 2005) was used to collect F0 data from 109 young male speakers (20-30 years old). The recordings were taken from the Swedia database

(<http://www.swedia.nu>) and the durations of the recordings range from 17.4 to 116.8 seconds with a mean duration of 52.3 and standard deviation of 15.2. The parameters extracted from the recordings were F0 mean, median, average baseline value (Fb), standard deviation, maximum and minimum in Hz. The range for the F0 tracker was set to 75 - 350 Hz to be able to cover all possible frequency excursions but at the same time avoid octave jumps.

3 Results and discussion

3.1 F0 means, medians and average baselines

This section contains five histograms showing F0 distributions using mean, median, and baseline in Hz.

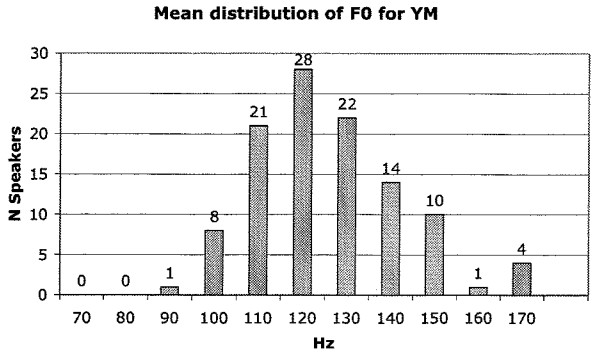

Figure 1. Histogram showing the distribution of F0 means for 109 young male speakers.

Approximately 65% of the speakers have a mean fundamental frequency between 100-130 Hz. The mean of the means is 120.8 Hz. There is a positive skewing (0.6) with five extreme outliers between 150-170 Hz. Since the automatic analysis had a tendency for making positive octave jumps it is suggested to use median as it is more robust (see Figure 2 below).

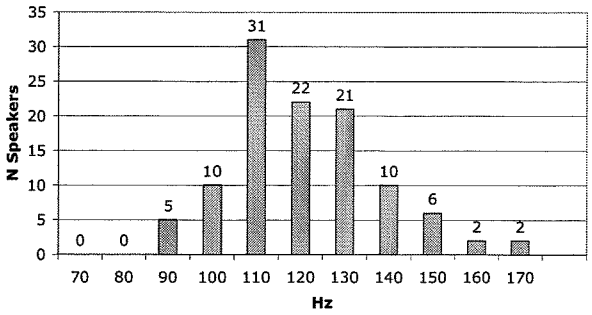

Figure 2. Histogram showing the distribution of F0 medians for 109 young male speakers.

The median distribution still has a positive skewing (still 0.6), but the mean (of the medians) has moved down to 115.8 Hz. There is now approximately 68% that has a median between 100-130 Hz.

For comparison, the average baselines according to Traunmüller (1994) were calculated (see Figure 3 below).

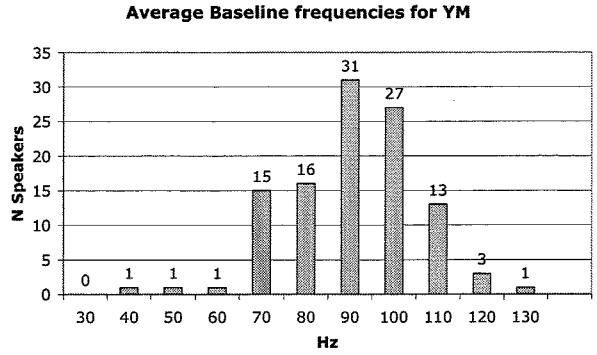

Figure 3. Histogram showing the average F0 baseline distribution for 109 young male speakers.

The baseline (F_b) is seen as a carrier frequency in the modulation theory (Traunmüller, 1994). As there are no major changes in vocal effort, voice register, or emotions involved in this material, F_b can be expected to be approximately 1.43 standard deviations below the average (Traunmüller & Eriksson, 1995b). The mean average baseline is 86.3 Hz, which corresponds quite well to Traunmüller & Eriksson's (1995a) average per balanced speaker of European languages (93.4 Hz for male speakers). The values show a slight negative skewing (-0.35) and approximately 68% of the values range between 70-100 Hz.

3.2 F0 standard deviation

Finally, the standard deviation distributions can be studied in Figure 4 and 5 below.

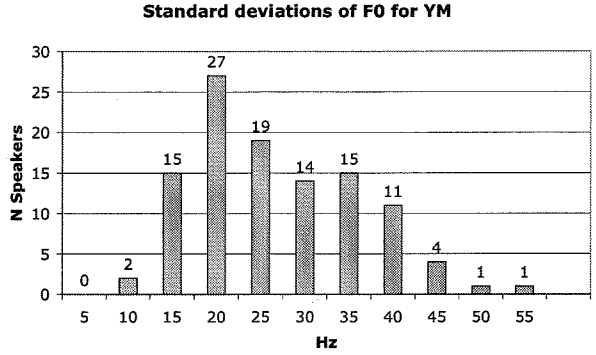

Figure 4. Histogram showing the F0 standard deviation distribution for 109 young male speakers.

A perceptually motivated measure for liveliness is to use semitones (Traunmüller & Eriksson, 1995b).

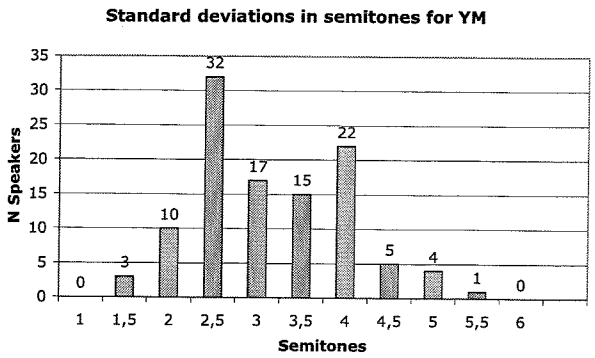

Figure 5. Histogram showing the F0 standard deviation distribution in semitones for 109 young male speakers.

4 Conclusions and future work

The preliminary statistics in this paper gives an overview on the distribution for Swedish young males' fundamental frequency mean and standard deviation. The results suggest the use of a more robust median instead of mean, since octave jumps influence the arithmetical mean. To be able to study between-speaker differences better, distributions for individual speakers should be compared and studied using different measures.

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L1 Residue in L2 Use: A Preliminary Study of Quantity and Tense-lax

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Abstract

The main question addressed in this preliminary study is what traces of L1 have been transferred to L2 use. The focus is on the durational aspects of the tense-lax and quantity contrasts in English and Japanese. The results could be interpreted as support for the hypothesis that an L1 durational pattern rather than a specific phonetic feature is the object of transfer.

1 Introduction

As a rule, adults who learn a second language are not completely successful in learning to produce and perceive L2 speech. Much of the recent research that has been done on the acquisition of second language phonology and phonetics has been concerned with the question of the source of foreign accent. A primary issue in both past and current studies of second language (L2) speech acquisition is how and to what extent the first language (L1) influences the learning of L2. The existence of common terms such as "French accent" have supported the importance of that which has become known as "L1 transfer" as a major contribution to foreign accent and numerous studies have been done to support the importance of this phenomenon.

The aim of the present study is to contribute to the understanding of the role of native language (L1) phonetic and phonological features in L2 speech acquisition. While considerable research has been done with this aim which has contributed significantly to the understanding of the nature of the phenomenon, there are still some important unanswered questions to be addressed. Central among these concerns what aspects of the perception and production of the L1 are actually transferred. One suggestion has been made by McAllister, Flege & Piske (2003). In the discussion of their results the question was raised as to whether a specific phonetic feature such as duration or an L1 durational pattern typical for the phonology of a particular L1 could be what is actually transferred. If this were the case, a durational pattern similar to that in L1 may be recognized in the use of the L2 contrast.

1.1 The pattern of durational relationships that can be found in Swedish and Japanese quantity and the abstract feature of tense-lax in English

Traditionally, the primary phonetic difference underlying phonological quantity distinctions has been attributed to durational differences in the vowels and or consonants, hence the "long-short" or "quantity" terminology. In Swedish there is a relatively complex interplay between temporal dimensions (i.e., the duration of a vowel and that of the following consonant) and spectral dimensions (i.e., formant values in the vowel). English is considered to have no quantity distinction. The tense-lax feature is considered to be a property of English phonology and is phonetically similar to some aspects of Swedish quantity. The phonetic characteristics