

Tyler, R.S. & B. Lindblom, 1982. Preliminary Study of Simultaneous-Masking abs Pulsation Threshold Patterns of Vowels. *Journal of the Acoustical Society of America* 71 (1), 220-224.

## Youth Language in Multilingual Göteborg

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### Abstract

*In this paper, the results from a perception experiment about youth language in multilingual Göteborg are presented and discussed.*

### 1 Introduction

#### *1.1 Language and language use among young people in multilingual urban settings*

The overall goal of the research project 'Language and language use among young people in multilingual urban settings' is to describe and analyze a Swedish variety (or set of varieties) hereafter called SMG (Lindberg, 2006). SMG stands for 'Swedish on Multilingual Ground' and refers to youth varieties like "Rinkeby Swedish" and "Rosengård Swedish". In the present paper, we address two of the project's research questions: SMG's relation to foreign accent and how SMG is perceived by the adolescents themselves.

#### *1.2 Purpose of the perception experiment*

In the perception experiment, Göteborg students are asked to listen for examples of "gårdstenska" (the SMG spoken in Göteborg) in recordings from secondary schools. The purpose is to identify speakers of SMG for future studies and to test the hypotheses that 1) monolingual speakers of Swedish can speak SMG and 2) speakers of SMG can code-switch to a more standardized form of Swedish. Foreign accent, defined here as the result of negative interference from the speaker's L1 (first language), cannot occur in the Swedish that is spoken by persons who have Swedish as their (only) L1, nor can foreign accent be switched off in certain situations.

### 2 Method

Stimuli were extracted from the research project's speech database and played once (over loudspeakers) to a total of 81 listeners. The listeners were asked to answer two questions about each stimulus: *Does the speaker speak what is generally called gårdstenska? (yes or no)*, and *How confident are you about that? (confident, rather confident, rather uncertain or uncertain)*. The listeners were also asked to answer a few questions about who they believed typically speaks gårdstenska. The 19 stimuli used in the experiment were approximately 30 second long sections that had been extracted from spontaneous (unscripted) recordings made at secondary schools in Göteborg. The listeners in the experiment were students from the same two schools as the speakers.

After having collected the answer sheets, a general discussion on SMG was held in each class.

### 3 Results and discussion

#### 3.1 Listeners' views on *gårdstenska*

80 of the 81 listeners answered the questions about who typically speaks *gårdstenska*. All 80 answered that adolescents are potential speakers of *gårdstenska*. 54% (43) answered that also children can speak *gårdstenska* and 15% (12) that adults are potential speakers. Almost half of the listeners (37) claimed that only adolescents speak *gårdstenska*. Only a third of the listeners (25) believed that *gårdstenska* can be spoken by persons without an immigrant background. Most of them, 23, answered that *gårdstenska* is also spoken by first and second generation immigrants. One listener, however, answered that only persons without immigrant background and first generation immigrants speak *gårdstenska*. The listener was herself a second generation immigrant. One listener in a similar experiment undertaken in Malmö (Hansson & Svensson, 2004) answered in the same fashion, i.e. excluding persons with the same background as the listener herself. Finally, 69% (55) of the listeners answered that only persons with an immigrant background speak *gårdstenska*. The majority, 30, regards both first and second generation immigrants as potential speakers of *gårdstenska*, whereas 15 only include first generation immigrants and 10 only second generation immigrants, see Figure 1.

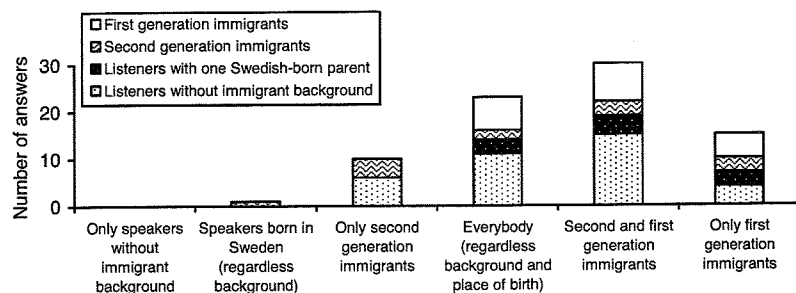


Figure 1. The listeners' answers to the question: *Who speaks what is generally called gårdstenska?*

#### 3.2 Listeners' classification of the stimuli

A statistically significant majority of the listeners regarded the stimuli P05a, P11a, P19, P10a, P08, P10b, P05b, P35, P11b and P47 as examples of *gårdstenska* ( $p < .05$ ). Between 36% and 80% of those listeners felt confident in their classification of the stimuli as *gårdstenska* whereas the corresponding percentages for the listeners classifying the same stimuli as 'not *gårdstenska*' varied from 27 to 57. Stimuli P38, P25, S40, S08, S15 and S30b were judged as examples of something else than *gårdstenska* by a majority of the listeners ( $p < .05$ ). Between 39% and 73% of the listeners felt confident in their classification of the stimuli as something else than *gårdstenska* whereas the corresponding percentages for the listeners classifying the stimuli as *gårdstenska* varied from only 10 to 50. Stimuli P49, S43, S30a and S23 were perceived as *gårdstenska* by about half of the listeners ( $p > .05$ ). 27% to 45% of the listeners that classified the stimuli as *gårdstenska* reported feeling confident and 23% to 42% of the listeners that classified the stimuli as not *gårdstenska*. Both the listeners' classifications of these four stimuli and their reported uncertainty indicate that the stimuli in question contain speech that cannot unambiguously be classified as either SMG or something else than SMG.

#### 3.3 Foreign accent or language variety?

Two hypotheses were tested in the experiment: 1) that monolingual speakers of Swedish can speak *gårdstenska* and 2) that speakers of *gårdstenska* can code-switch to a more standardized form of Swedish. Table 1 shows the relationship between the speakers' background (if they have an immigrant background or not) and language use (SMG or not). An immigrant background is neither necessary nor sufficient for a speaker to be classified as a speaker of SMG. Three monolingual speakers of SMG were identified.

Speech produced by speakers P11, P05 and P10 was used in two different types of stimuli: a) talking to friends and b) to a project member/researcher. Unlike in the Malmö experiment (Hansson & Svensson, 2004), no speaker was classified as a speaker of SMG in one stimulus but not in the other. P11a was perceived as a speaker of *gårdstenska* by a statistically significant majority of the listeners in situation a (93%,  $p < .05$ ) but not unambiguously classified in situation b (69% SMG classifications,  $p > .05$ ). P05 and P10 also got larger proportions of SMG classifications in the a stimuli than the b stimuli, but in both types of stimuli they were classified as speakers of SMG ( $p < .05$ ).

Table 1. Speakers' background and classification by the listeners in the experiment.

Classification according to the listeners ( $p < .05$ )	Speakers born in Sweden		Speakers not born in Sweden	
	with at least one parent born in Sweden	with parents not born in Sweden	to Sweden before 6 years of age	to Sweden at 6 years of age or later
SMG	P47, P35, P08	P10	P19	P11, P05
Not SMG	S15	S30, P25, P38	S08	S40

#### 3.4 Differences in awareness of and attitude towards *gårdstenska*

One thing that should be mentioned is that the term *gårdstenska* used in the survey (and in this paper) did not seem to be as widely accepted as we thought. Initially there was some uncertainty among the listeners what kind of language use we were referring to. However, when we described it as a "Göteborg version of Rinkeby Swedish", the listeners seemed to understand what they were asked to listen for. Since we were interested in the listeners' attitudes towards, and their awareness of *gårdstenska*, we tried to initiate a discussion about the subject matter after having completed the experiment. The observations described below are based on field notes and recollections and are not to be seen as results of the experiment but rather as overall impressions.

When asked on what grounds they had categorized the speakers in the experiment most listeners seemed to agree that the use of certain words was crucial for their decision. Some students mentioned pronunciation, prosody and word order as typical features. In two of the five classes most of the time was spent listing words and phrases typical for *gårdstenska*. In the other three classes the discussion topic varied from typical linguistic features to more socio-linguistic aspects of multi-ethnic youth language. Several students in different classes made an explicit distinction between *gårdstenska* and foreign accent, and in one class a discussion developed about the function of multi-ethnic youth language as an identity marker used by adolescences who aim to underline their non Swedish identity. The student who was the most active in this part of the discussion also emphasized the difference between multi-ethnic youth varieties and foreign accents and drew parallels to regional varieties of Swedish.

Concerning students' attitudes towards *gårdstenska* there appeared to be some considerable differences between some of the classes. From this angle the discussion was particularly interesting in one of the classes. Only one male student in this class seemed to identify with speakers of *gårdstenska* (or "invandriska" as he himself called it). This student said that he

would not use what we referred to as *gårdstenska* in class because his classmates would laugh at him. He refused to name any typical words or features of *gårdstenska* in class but volunteered to hand in a word list, which only we as researchers were allowed to look at. This student made it clear that "invandriska" was a language he used with his friends outside his class and never in the classroom. Interestingly this was the same class we mentioned above, where students talked about *gårdstenska* as an identity marker, whereas some students were quite determined in their opinion that this kind of language use was due to a low proficiency in Swedish. Within the other classes the subject seemed less controversial. We can, of course, only speculate about the cause for these differences between the classes. One impression was that there was less controversy about the issue in those classes where more students seemed to identify with speakers of *gårdstenska*, which were also the more heterogeneous regarding the students' linguistic and cultural background.

### 3.5 Listeners' awareness of sociolinguistic variation

After visiting the five different school classes in two of Göteborgs multi-lingual areas the overall impression was that a lot of the students showed at least some awareness of sociolinguistic aspects in language use. Some students, as mentioned above, explicitly discussed aspects of language and identity, showing great insight and strong opinions on the issue. Overall most students seemed to acknowledge that *gårdstenska* is spoken in certain groups (i.e. among friends but not with teachers or parents) and in certain situations and not in others. Thus the listeners showed some awareness of register variation, even though there were different opinions on the question to what extent speakers make a conscious linguistic choice or unconsciously adapt their language when code-switching between *gårdstenska* and other varieties of Swedish. There was, however, a minority of listeners who categorized what they heard in some of the stimuli as interlanguage of individuals lacking proficiency in Swedish.

### 4 Future work

The monolingual speakers of SMG support the hypothesis of SMG being a variety of Swedish rather than foreign accent. From discussions with adolescents we have learnt that SMG is primarily used among friends and not with e.g. teachers and parents. Therefore it is interesting that some speakers in the experiment were perceived as speaking SMG (albeit to a lesser degree) even in dialogues with adults. Future work includes investigating if some features of SMG (e.g. the foreign-sounding pronunciation) are kept even in situation where other features (e.g. the SMG vocabulary) are not used, and if these features possibly are kept also later in life when the speakers no longer use a youth language.

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### References

- Hansson, P. & G. Svensson, 2004. Listening for "Rosengård Swedish". *Proceedings FONETIK 2004*, 24-27.  
 Lindberg, I., 2006. *Språk och språkbruk bland ungdomar i flerspråkiga storstadsmiljöer 2000-2006*. Institute of Swedish as a Second Language, Göteborg University.  
[http://hum.gu.se/institutioner/svenska-spraket/isa/verk/projekt/pag/pg\\_forsk2](http://hum.gu.se/institutioner/svenska-spraket/isa/verk/projekt/pag/pg_forsk2)

## Prosodic Cues for Hesitation

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### Abstract

*In our efforts to model spontaneous speech for use in, for example, spoken dialogue systems, a series of experiments have been conducted in order to investigate correlates to perceived hesitation. Previous work has shown that it is the total duration increase that is the valid cue rather than the contribution by either of the two factors pause duration and final lengthening. In the present experiment we explored the effects of F0 slope variation and the presence vs. absence of creaky voice in addition to durational cues, using synthetic stimuli. The results showed that variation of both F0 slope and creaky voice did have perceptual effects, but to a much lesser degree than the durational increase.*

### 1 Introduction

Disfluencies of various types are a characteristic feature of human spontaneous speech. These can occur for reasons such as problems in lexical access or in the structuring of utterances or in searching feedback from a listener. The aim of the current work is to gain a better understanding of what features contribute to the impression of hesitant speech on a surface level. One of our long term research goals is to build a synthesis model which is able to produce spontaneous speech including disfluencies. Apart from increasing our understanding of the features of spontaneous speech, such a model can be explored in spoken dialogue systems, both to increase the naturalness of the synthesized speech (Callaway, 2003) and as a paralinguistic signalling of for example uncertainty in a dialogue. The current work deals with the modelling of one type of disfluency, hesitations. The work has been carried out through a sequence of experiments using Swedish speech synthesis.

If we are to model hesitations in a realistic way in dialogue systems, we need to know more about what phonetic features contribute to the impression that a speaker is being hesitant. A few studies have shown that hesitations (and other types of disfluencies) very often go unnoticed in normal conversation, even during very careful listening, but scientific studies have in the past concentrated much more on the production than on the perception of hesitant speech. Pauses and retardations have been shown to be among the acoustic correlates of hesitations (Eklund, 2004). Significant patterns of retardation in function words before hesitations have been reported (Horne et al., 2003). A recent perception study (Lövgren & van Doorn, 2005) confirms that pause insertion is a salient cue to the impression of hesitation, and the longer the pause, the more certain the impression of hesitance.

With a few exceptions, relatively little effort has so far been spent on research on spontaneous speech synthesis with a focus on disfluencies. In recent work (Sundaram &