

Controlled manipulation of intonational difference: An experimental study of intonation patterns as the basis for language-ideological constructs of geographical provenance and linguistic standardness in young Danes

Tore Kristiansen, Nicolai Pharao and Marie Maegaard

Copenhagen University, Denmark

BACKGROUND: THE DANISH LANGUAGE-IDEOLOGICAL SITUATION AS KNOWN FROM PREVIOUS INVESTIGATIONS

To the extent that perceptions and evaluations of difference and variation in language use are crucial to people's notion of standardness in language, investigations of such perceptions and evaluations are of course a prerequisite for the SLICE endeavour of understanding contemporary processes of language (de)standardisation. The motivation to carry out the experiment to be described in this chapter came from our presumption that the basis for Danish perceptions and evaluations of geographically-distributed variation has largely been reduced to prosodic features in recent decades, as Copenhagen 'ways with language' at all other levels of linguistic description have been adopted by youngsters everywhere in the country. Even in terms of prosody, this 'Copenhagenisation' is so complete with many youngsters that it often is difficult, even for trained dialectologists, to discover any local colouring in their speech at all. Thus, in terms of language use, the standardisation of spoken Danish is probably more advanced than in any other European country.

Having stressed that Denmark as a whole is characterised by far-reaching linguistic homogenisation (in the sense that Copenhagen speech replaces the traditional dialects everywhere), we should also stress that Copenhagen speech itself is rich in phonetic segmental variation, and that this variation comes along as Copenhagen speech spreads throughout the country. Thus, with the various degrees of local (non-Copenhagen) prosodic features which are also present, the speech of non-Copenhagen youngsters is probably characterized by more variation today than in the traditional dialect-speaking communities. In our

LANCHART studies (www.dgcss.dk), we have established that this variation is systematically perceived and evaluated in ways which indicate that young Danes live with and relate to *three normative targets* as ‘naturally’ present ingredients of their everyday life in any community outside of Copenhagen (more below). In our terminology, these are the MODERN, CONSERVATIVE, and LOCAL targets, i.e. three different combinations of social values and ways of speaking. MODERN vs. CONSERVATIVE summarises the social-values distinction that attaches to the segmental (Copenhagen-originating) variation, while LOCAL represents the nexus of social values and speech which adds local (non-Copenhagen) prosodic colouring to the segmental variation. Speech in Copenhagen is characterised by (C/M) variation; speech in any local community (outside of Copenhagen) is characterised by (C/M/L) variation.

In the LANCHART project we have studied the social-values aspect of the far-reaching Copenhagenisation of Danish society in several ways. A major instrument has been a series of speaker evaluation experiments (SEEs), in which data susceptible of illuminating young people’s notion of ‘Danish standard language’ were collected in three different evaluative tasks. The young non-Copenhagen respondents listened to twelve speakers representing the (C/M/L) variation assumed to be relevant for ‘social identifications’ in their own community – i.e. four speakers for each of the three assumed targets. The CONSERVATIVE and MODERN speakers were the same in all studied communities, whereas the LOCAL speakers differed, of course, from community to community.

In the first task, in a first phase of the SEEs, the respondents were kept unaware of giving away attitudes to language (because we knew from earlier investigations in Denmark that consciously and subconsciously offered language attitudes are two very different things) while evaluating the speakers on value-laden personality traits. In the second phase of the SEEs, the respondents were informed about the attitudes-to-language aspect of the experiment, and completed two simultaneous tasks while listening to the twelve speakers once again. They were asked to evaluate on a scale how *rigsdansk* (the common name for ‘standard Danish’) each of the speakers sounded to them, and at the same time indicate whether they thought the speaker was from ‘Copenhagen’ or from their ‘own big city’ near-by.

Thus, on the assumption that linguistic (de)standardisation processes are basically driven by ideas about ‘good and bad’ language, the aim of our SEEs was to obtain evaluative hierarchisations on three different parameters that could shed light on what counts as ‘best language’ among young Danes: evaluations in

terms of (1) ‘personal appearance’, (2a) ‘standardness’, and (2b) ‘Copenhagenness’. The results are shown in Table 1 (cf. Kristiansen 2009: Tables 9, 6 and 4; also see the introduction to this volume).

Table 1: SEE rankings of the (C/M/L) variation by a nationwide sample of adolescent non-Copenhageners on the three parameters of ‘personal appearance’, ‘standardness’, and ‘Copenhagenness’ (> = significantly more than; / = statistically no difference)

(1) ‘personal appearance’					
– superiority	C	>/	M	>	L
– dynamism	M	>	C	>	L
(2a) ‘standardness’	C	>	L	/	M
(2b) ‘Copenhagenness’	M	>	C	>	L

In task (1), when the young non-Copenhagen respondents were unaware of giving away attitudes to language, they evaluated the way their local peers speak (which in most cases will be their own way of speaking) more negatively than they evaluated the way young Copenhageners speak. This relative downgrading of LOCAL speech happened regardless of whether the Copenhagen voices were heard in a MODERN or CONSERVATIVE version. With regard to the (C/M) variation, MODERN clearly beat CONSERVATIVE on dynamism traits, while CONSERVATIVE did as well or better on superiority traits (indicated by >/ in the table).

In the second task (2a and 2b), when the respondents had been informed of the language-attitudes objective of the experiment, CONSERVATIVE was the only ‘winner’ as MODERN was downgraded to share a clearly less *rigsdansk* position with LOCAL. At the same time, the MODERN and LOCAL voices were to a large extent correctly allocated in terms of geographical provenance: the MODERN voices were allocated to ‘Copenhagen’ by two out of three respondents, and the LOCAL voices were allocated to their ‘own big city’ by three out of four respondents.

Perhaps more surprisingly, the four CONSERVATIVE voices were allocated to ‘Copenhagen’ and ‘own big city’ in a way that gave a fifty-fifty distribution. This might be interpreted as an indication of impressive success for the long-standing and well-known ideology which professes that *rigsdansk* is a non-localizable variety of the language. If non-localizability is an essential feature of CONSERVATIVE, a fifty-fifty distribution seems the logical average resulting from

a task where hundreds of respondents are forced to allocate four voices to one of two geographical sites (either ‘Copenhagen’ or ‘own big city’).¹

What mainly interests us here, however, is the role of prosodic vs. segmental difference in the above picture. As already noted, it is our assumption that LOCAL differs from CONSERVATIVE and MODERN in terms of prosody, whereas the difference between the latter two is a matter of segments. If we first compare the results for ‘overt’ evaluations – *consciously offered* in terms of ‘standardness’ and ‘Copenhagennes’ – we then observe that both prosodic and segmental features seem to have played a very different role in the simultaneous assessments of whether speech is *rigsdansk* (‘standard’) on the one hand, and ‘from Copenhagen’ on the other hand. Likewise, when we consider the ‘covert’ evaluations – *subconsciously offered* in terms of ‘personal appearance’ – there seems to be no congruity or interdependence between these evaluations and the overt evaluations of ‘standardness’.

Things look quite different, however, when we compare the results for ‘personal appearance’ with the overt representations of ‘Copenhagennes’. In general terms, LOCAL prosody seems to override (or neutralise) the potential impact from whatever segmental (C/M) variation the local stimulus voices may exhibit, making you a ‘non-Copenhagener’ and harming your ‘personal appearance’ (in comparison with ‘Copenhageners’) with respect to superior and dynamic values alike. In contrast, COPENHAGEN prosody combines with CONSERVATIVE segments to make you appear ‘superior’ and ‘non-localizable’, with MODERN segments to make you a true ‘Copenhagener’ and a particularly ‘dynamic’ person.

The basic interest behind these LANCHART studies is to contribute to solve the *evaluation* problem of linguistic change (Weinreich, Labov and Herzog

¹ However, it is also possible that this result for CONSERVATIVE to some extent should be seen as a methodological artifact. If the sample as a whole favour the choice ‘Copenhagen’ for the MODERN voices and ‘own big city’ for the LOCAL voices, and there is a general tendency in the sample to presume that each city should be allocated the same number of voices, one might suspect a fifty-fifty distribution of the CONSERVATIVE voices to be the likely outcome – notwithstanding the fact that respondents were explicitly told that it was not the case, necessarily, that half of the voices were from ‘Copenhagen’ and the other half from the ‘own big city’, and then listened to and judged the voices in an order (four successive sequences of CONSERVATIVE–MODERN–LOCAL voices) that made it difficult and rather meaningless for each individual respondent to engage in a final reallocation of the CONSERVATIVE voices. To which extent this kind of reallocation happened, could possibly be studied by scrutinizing ‘corrections’ in the original data, but the issue is of little significance to the experiment we present here. No matter how, the result indicates that MODERN is more tightly associated with ‘Copenhagen’ than CONSERVATIVE.

1968). We believe that language ideologies, social evaluations of ‘good and bad’ in language, do play a crucial role as ‘driving force’ in linguistic change, but also that there are language-related ideologies which fulfil social functions without influencing the use of language. Our endeavours to shed light on what counts as ‘best language’ among young Danes are undertaken in the interest of localising the ideological driving force behind their changing ways with language. By tapping into three presumably important constituents of Danish language-related ideology as described, we think we have obtained fairly strong evidence that the constituents with a driving-force role to play are ‘covert’ (subconsciously offered) representations of ‘best language’. These include social evaluations (operationalised as value-laden personality traits in our SEEs) in close linkage with representations of geographical provenance (in terms of Copenhagen vs. non-Copenhagen) – but largely in independence of representations of *rigsdansk* (which is the term that constructs the notion of standardness in Danish public discourse). Furthermore, and most importantly in our connection here, we do believe that prosodic features make up the major, and often maybe only, linguistic basis for the described categorisations in geographical and social space. This is a belief we have often aired, without having any solid, scientifically established, evidence for it. The experiment we report on here is our first attempt to remedy this situation.

INTONATION IN DANISH

Prosodic features that may be of relevance to social identifications in the Danish speech community include intonation, stress, and *stød* (a Danish specialty linked to the syllable, articulated as a glottal constriction or closure). Intonation is commonly thought to be the main clue to regional identification:

Det er trykgruppens lille talemelodi, trykgruppemønstret, der er vores stærkeste dialekt- og regional sprogsken demærke. Det er først og fremmest på disse små tonale figurer at vi (gen)kender hinanden som bornholmere, københavnere, sønderjyder o.s.v.).

[‘It is the brief speech melody of the stress group, the stress group pattern, which is our strongest marker of dialectal and regional difference. It is first and foremost by these small tonal figures that we recognise each other as people from Bornholm, Copenhagen, Southern Jutland, etc.’] (Grønnum 2005: 340).

Although we suspect that non-Copenhagen *stød* (in terms either of manifestation or distribution, or both) is likely to be the more characteristic and readily recognizable feature of speech on Sealand (the eastern island where Copenhagen is situated), we certainly do subscribe to the assumption of a more general, nationwide role for intonation, as expressed in the quote above by the leading expert on Danish intonation, Nina Grønnum. In this first experimental study of Danish prosody in social identification processes, we chose to focus on the role of intonation in the categorisation of speakers as originating either from Copenhagen, or from Denmark's second largest city Århus in Jutland, i.e. the western part of the country.

The 'stress group pattern' is the tonal contour initiated by a stressed syllable (Grønnum 1992). In Danish read-aloud speech, the shape of this contour has been found to be invariant within regional varieties, but reliably different across varieties. The main difference concerns the relation of the F0 peak to (the nucleus of) the stressed syllable: in some varieties the peak is *in* the stressed syllables, notably western/Jutlandish varieties of Danish, and in other varieties the peak does not occur until after the stressed syllable, sometimes as late as in the first post-tonic syllable, notably in Copenhagen Danish.



Figure 1: Stress group patterns in Copenhagen Danish and Århus Danish (Grønnum 1992). The large dot indicates the position of the stressed syllable, the small dots indicate unstressed syllables (see further the text)

Figure 1 shows how the stress group pattern – i.e. the change in the F0 contour from a stressed syllable to the subsequent unstressed syllables – is different in read-aloud Copenhagen and Århus speech (Thorsen and Nielsen 1981). In Copenhagen speech, the stressed syllable has a low (and potentially falling) tone with a subsequent rise to a high tone in the first unstressed syllable (followed by a fall if there is more than one unstressed syllable in the group). In Århus

speech, the pattern is the opposite: the tone is high (and potentially rising) in the stressed syllable, and is followed by a fall through the first unstressed syllable (and the fall continues if there are more unstressed syllables (Thorsen and Nielsen 1981: 9)).

CONTROLLED MANIPULATION OF INTONATION

Although Labov already in his New York study (Labov 1966) studied the social evaluation of speech differences using tape-recorded stimulus materials based on cutting-and-pasting of the variants of particular variables, the study of listeners' perceptions and evaluations of variation in speech has most often been conducted at the level of varieties rather than variables. This is certainly true for the study of perception and evaluation of regional variation in Danish, where all studies have used 'verbal guises' – i.e. recorded excerpts of 'naturally' produced speech as stimuli – in SEEs (e.g. Maegaard 2005; Kristiansen 2009). In recent years the increased availability of technological resources for more specific manipulation of stimuli has led to a noticeable increase in studies that focus on the role of particular phonetic features in the classification of speakers on traits associated with regional affiliation, e.g. Plichta and Preston (2005) on /ɑj/ monophthongisation in U.S. English, Campbell-Kibler (2007) on 'g dropping' in (ING) in U.S. English. Empirical studies in some European communities have found intonation to be relatively unimportant for discrimination and/or recognition of regional varieties (see evidence for Norwegian and Dutch in Gooskens 2005, and Gooskens and Heeringa 2006, for Austrian in Feizollahi and Soukup 2009). However, van Leyden (2004) found that different pitch patterns are important to the recognition of Orkney and Shetland varieties of English.

The two varieties of English on the islands of Orkney and Shetland in van Leyden (2004) differ on the timing of the peak relative to the vowel of the stressed syllable in a way that is similar to the difference between the stress group patterns found for the varieties in Copenhagen and Århus. Van Leyden conducted a series of experiments on the perceptual discrimination of the two varieties including classification on the basis of monotonised stimuli – where the tonal contour is constant and flat, in effect cancelling the prosodic difference between the two varieties – and on the basis of low-pass filtered samples in which the upper part of the spectrum is removed, whereby most of the segmental and hence lexical information in the speech signal is also removed (since the

utterance becomes incomprehensible), leaving (nearly) only the prosodic cues to the two different dialects. Interestingly, van Leyden found that while listeners could in fact discriminate above chance on the basis of prosody alone, i.e. when exposed to low-pass filtered speech, they were better at discriminating when the segmental information remained intact but the tonal contour had been monotonised. This suggests that while the tonal contour is sufficient for identification of speaker origins to most listeners, segmental information makes identification easier. However, van Leyden also found that speakers of the Orkney dialect would classify a sample of Shetland speech as being spoken by an Orcadian, if the intonation of the sample matched the pattern for the Orkney dialect. Using recordings of segmentally identical (read aloud) utterances in the two dialects, she transposed the F0 contour from the Orkney version to the Shetland version and then had listeners judge where the speaker was from. The majority classified the speaker of these utterances as coming from Orkney (the pattern was not as clear for Shetland, cf. van Leyden 2004: 54–59 for details and discussion).

In our experiment, we used a modified version of van Leyden's (2004) study, based on the transposition of intonation contours in the three speech styles that have most salience in Copenhagen and Århus.

STIMULUS VOICES

We used three voices from the LANCHART SEEs – one MODERN voice, one CONSERVATIVE voice (both from Copenhagen) and one LOCAL voice (from Århus) – all of them being voices of young men. We took two clips from each of the three voices: one which was used un-modified, and one which had its intonation modified. As we knew from our previous research that young Danes can make decisions about even very short stretches of speech (Maegaard 2007), we used clips that were only 8 seconds long, which facilitated the modification process. Transcriptions of the clips are shown on the next page, in IPA, Danish orthography, and English translation.

As already signalled, the distinction between the two Copenhagen-based accents is a matter of segmental, not intonational, differences. In the clips used, the MODERN voice exhibits velarisation of [ð], which is a characteristic feature of the MODERN accent. In contrast, the difference between the Copenhagen-based accents and the Århus-based accent is mainly a matter of intonation (see Figure 1). This is also the case with our clips.

CONSERVATIVE Copenhagen, not modified

det skal være en lærer som der ikke er d- øh det skal være en lærer der først og fremmest har styr på sit stof det må være må være altafgørende

[d̥e s̥g̥a v̥e̥ en 'l̥e:ɐ sm d̥a 'e̥g̥ ɛ̥ d̥ ɔ̥: d̥ə s̥g̥a v̥e̥ en 'l̥e:ɐ d̥a 'f̥œ̥ɛ̥s̥d̥ ɐ 'fram̥m̥s̥d̥ ha 's̥d̥y̥e̥?
p^hɔ̥ s̥id̥ 's̥d̥œ̥f̥ 'd̥e m̥ɔ̥ v̥e:ɐ m̥ɔ̥ v̥e:ɐ 'al̥d̥əw̥.ɡ̥œ̥ʔənə]

'it has to be a teacher who is not i- eh it has to be a teacher who first of all controls his stuff that must be must be all-decisive'

CONSERVATIVE Copenhagen, modified to ÅRHUS

læreren behøver ikke at at gøre det interessant det er ikke lærerens job at motivere eleven men hvis læreren er i stand til det så er det jo klart en fordel

['l̥e:ɐn b̥ə'h̥œw̥ʔe̥ e̥g̥ ɐ: ɐ ɡ̥œ̥ɛ̥ d̥e ent̥s̥k̥e̥'san̥d̥ d̥e 'e̥g̥ 'l̥e:ɐns̥ 'd̥j̥œ̥b̥ ɐ mot̥si've:ʔe̥ e̥'lew̥ʔun m̥en
ves 'l̥e:ɐn ɛ̥ɛ̥ i 's̥d̥an̥ t̥s̥e̥ d̥ə s̥ə d̥e jo 'kla:ʔd̥ n̥ 'f̥ɔ̥: d̥e:ʔl̥]

'the teacher does not have to to make it interesting it is not the teacher's job to motivate the student but if the teacher is capable of it then it's of course an advantage'

MODERN Copenhagen, not modified

en god lærer skal være forberedt til hver time og det skal ikke bare være det traditionelle hver gang med at skrive ned og læs og fortælle om det bagefter

[en 'ɡ̥o:ʔ l̥e̥ s̥g̥ə v̥e̥ 'f̥ɔ̥b̥ə, ɛ̥:ʔd̥ t̥s̥e̥ 'v̥e̥ɛ̥ʔ 't̥si:m̥ ɐ: d̥e s̥g̥a 'e̥g̥ 'b̥ɑ: 'v̥e̥ d̥e t̥s̥v̥ɑd̥əɔ̥'n̥e̥l̥ʔl̥
'v̥e̥ɛ̥ 'ɡ̥ɑ̃ʔ m̥e̥ ɐ s̥ɡ̥iʊ n̥e̥ð̥ʔ ɐ 'l̥e:ʔs̥ ɐ f̥e̥'t̥s̥e̥l̥l̥ ɛ̥m̥ d̥e 'b̥ɛ:ʔ ɛ̥f̥d̥ɐ]

'a good teacher should be prepared for every class and it should not be the traditional each time with write down and read and tell about it afterwards'

MODERN Copenhagen, modified to ÅRHUS

der skal være nogle kreative indtryk eller indskud hvor at at man selv skal finde på nogle ting eller man får nogle opgaver så man ligesom får udvidet det

[d̥ə s̥g̥a v̥e̥ n̥ɔ̃:ɔ̃n̥ 'k̥h̥ɛ̥a, t̥siw̥ʔu̥ 'en, t̥s̥k̥œ̥g̥ ɛ̥l̥ə 'en, s̥ɡ̥u̥ð̥ʔ 'v̥ɔ̃ aɔ̃ d̥ə man 's̥əl̥ʔ s̥g̥a f̥enn̥ p̥h̥ɔ̃ n̥ɔ̃
't̥s̥ẽʔ ɛ̃l̥ə man 'f̥ɔ:ʔ n̥ɔ̃:ɔ̃n̥ 'ɐ̃b̥, ɡ̥ɛ: w̥e̥ 's̥ə man 'lis̥əm̥ f̥ɔ̃ 'ũð̥, v̥ið̥ʔ, d̥e]

'there should be some creative impressions or insertions where you yourself have to come up with something or you get some tasks so that you kind of get it broadened'

ÅRHUS, not modified

jeg sy- jeg synes det er vigtigt at øhm at at læreren ligesom øhm jamen tager tager hånd om det og øh og også bestemmer en hel del af det som der skal ske

[jas ja 's̥yns̥ d̥e: 'v̥e̥ɡ̥d̥ið̥ 'aɔ̃ ɔ̃:m̥ a aɔ̃ 'l̥e:ɐ:n̥ 'lis̥əm̥ ɔ̃:m̥ jam̥n̥ t̥s̥ɛ̃ t̥s̥ɛ̃ 'h̥æn̥ʔ ɛ̃m̥ d̥e ɐ ɔ̃: 'ɐ 'əs̥
b̥e's̥d̥ẽm̥ʔẽ en 'he:ʔl̥ 'd̥e:ʔl̥ a d̥e: s̥əm̥ d̥ə s̥g̥a 's̥ɡ̥e:ʔ]

'I thi- I think it is important that ehm that that the teacher ehm you know takes control and eh and also decides a good deal of what is going to happen'

ÅRHUS, modified to COPENHAGEN (CONSERVATIVE/MODERN)

en god lærer skal selvfølgelig være en en øh en veluddannet lærer en lærer som øh som ved en masse og og kan svare på spørgsmål

[en 'ɡ̥o:ʔ 'l̥e:ɐ s̥g̥a: se'f̥ø̃l̃li v̥e:ɐ en: en ɔ̃: en 'v̥ẽl̥ũð̥, d̥an̥ʔə 'l̥e:ɐ en 'l̥e:ɐ s̥əm̥ ɔ̃: s̥əm̥ 'v̥eð̥ʔ en
'mas̥ə ɐ: ɐ k̥h̥a sv̥ɑ:ɑ̃ p̥h̥ɔ̃ 's̥b̥œ̃ɛ̃s̥, m̥ɔ:ʔl̥]

'a good teacher should of course be a a eh a well-educated teacher a teacher who eh who knows a lot and and can answer questions'

Since the stimuli used in the SEEs were verbal guises – i.e. the produced utterances were not the same, as they would have been with matched guises, but excerpts from spontaneously produced answers to the question ‘what is a good teacher?’ – the segmental material and the number of unstressed syllables in the stress groups was not identical across the stimuli, and therefore we could not transpose the F0 contour from Copenhagen stimuli onto the Århus stimuli, nor vice versa. Hence, the F0 contour was re-synthesised in all six guises, and it was further manipulated manually in the modified versions of the three voices, such that all stressed syllables in each of the Copenhagen guises were given the high-falling pattern typical of Århus speech, and, similarly, all stressed syllables in the Århus guise were given the low-rising pattern typical of Copenhagen speech. In each case, care was taken not to produce a broader F0 range than the one present in the original. The manipulation was done in PRAAT (version 5.1.35, Boersma and Weenik 2009).

Because recordings may differ with regard to how easily the F0 pattern can be re-synthesised without adding an artificial touch to the voice we also asked the participants in the experiment to assess the voices in terms of naturalness/artificiality. This was also the reason for re-synthesising all six guises, rather than simply using clips from the original recordings: re-synthesis changes the sampling rate of the signal making them sound like somewhat inferior recordings compared to the originals. We did not want to confound this factor with modification of the stress group patterns, and therefore we re-synthesised all of them.

PARTICIPANTS, ANSWERING FORMAT, PROCEDURE

The data were collected in November/December 2009. The respondents were 104 students of Danish at the universities of Århus (n=37) and Copenhagen (n=67). We will refer to these two samples as ÅU and CU.

The experiment started by the distribution of a simple one-sheet answering form to each student. The front page listed 6 voices (voice 1, voice 2,... etc.) with the two answering options ‘Århus’ and ‘Copenhagen’ for each of the voices. The back page listed the voices in the same way but with the answering options ‘Natural’ and ‘Artificial’.

The following information and instruction was given orally and was at the same time projected on a screen in written form: *Du skal nu høre 6 stemmer. De*

er alle sammen drengestemmer. Lyt først til dem alle sammen en gang i træk. ('You are going to hear 6 voices. All are boys' voices. First listen one time to all of them in a row'). Then, after the first round of listening: *Du skal nu høre de 6 stemmer en gang til. Denne gang skal du for hver stemme angive på skemaet om drengen lyder som om han kommer fra København eller Århus* ('You will now hear the 6 voices one more time. This time you indicate for each voice whether you think the boy sounds as if he is from Copenhagen or from Århus').

After completion of the first part of the experiment, the participants were asked to turn the answering form and were given the following information and instruction: *De 6 stemmer du lige har hørt, stammer fra nogle forsøg med at fremstille kunstig tale til mobiltelefonselskaber. Nogle af stemmerne var kunstige og nogle af dem var naturlige. Lyt til stemmerne igen og angiv for hver enkelt af dem om du synes stemmen lyder naturlig eller kunstig* ('The 6 voices you have just heard were taken from attempts to produce artificial speech for mobile phone companies. Some of the voices were artificial and some were natural. Listen to the voices again and indicate for each of them whether you think the voice sounds natural or artificial').

RESULT: ALLOCATION OF NON-MODIFIED AND MODIFIED VOICES TO COPENHAGEN OR ÅRHUS

Figure 2 shows that the great majority of the participants allocated the *non-modified* voices correctly to Copenhagen and Århus – i.e. in accordance with the genuine geographic background of the voices. As many as 9 out of 10 judges allocate CONSERVATIVE to Copenhagen and ÅRHUS to Århus. There is more disagreement about where to place MODERN; only 3 out of 4 allocate the voice to Copenhagen. The difference between the two samples of students from ÅU and KU is statistically non-significant for all three accents.

Figure 3 shows that the great majority of the participants allocated the three *modified* voices to Copenhagen and Århus in a way which was 'wrong' with regard to their genuine geographical background, but 'correct' with regard to the modified stress group pattern. Modified MODERN was allocated to Århus by more subjects than modified CONSERVATIVE. We may notice that this difference is bigger for the ÅU students than for the CU students. It goes for all three accents, however, that the difference between ÅU and CU is statistically non-significant.

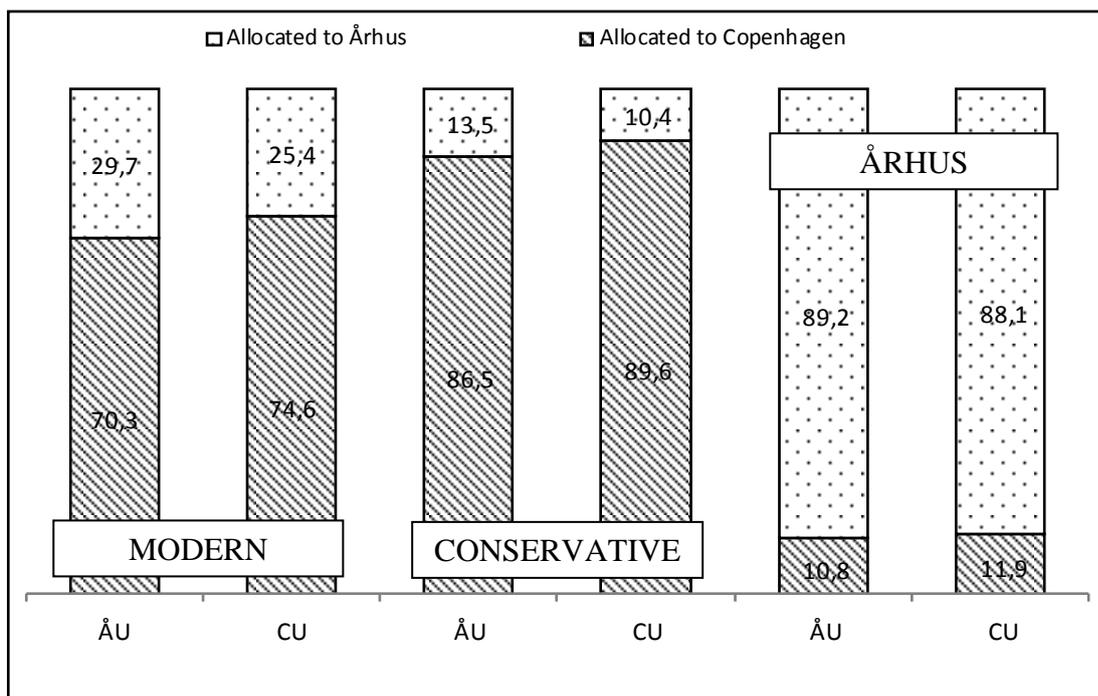


Figure 2: Allocation of the non-modified voices MODERN, CONSERVATIVE and ÅRHUS to ‘Copenhagen’ and ‘Århus’ (shown as percentages) – by students of Danish at ÅU (n=37) and CU (n=67). The difference between ÅU and KU is statistically non-significant as far as all three accents are concerned.

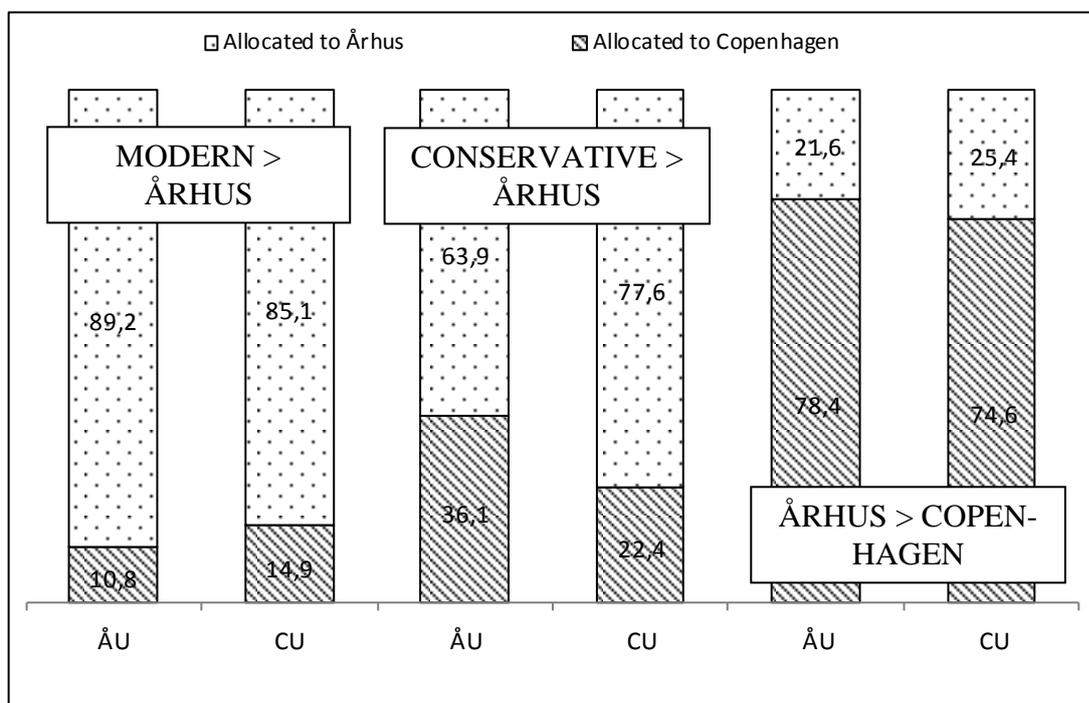


Figure 3: Allocation of the modified voices [MODERN > ÅRHUS], [CONSERVATIVE > ÅRHUS] and [ÅRHUS > COPENHAGEN (MODERN/CONSERVATIVE)] to ‘Copenhagen’ and ‘Århus’ (shown as percentages) – by students of Danish at ÅU (n=37) and CU (n=67). The difference between ÅU and KU is statistically non-significant as far as all three accents are concerned.

This is the main result of the experiment, and we think that it quite convincingly confirms our assumption that identification of speakers as originating from Århus or Copenhagen merely rely on intonation. Our modification of the stress group patterns changed the perception of the voices: the young man from Århus became a Copenhagener, the two Copenhageners became young men from Århus.

DISCUSSION

Even if the main result is clear enough, there is a difference in how successful the modification of intonation was in modifying the perceived city-identity of the speakers. The bars for the [MODERN > ÅRHUS] voice in Figure 3 looks the same as the bars for the ÅRHUS voice in Figure 2, just like the bars for the [ÅRHUS > COPENHAGEN] voice in Figure 3 looks very much the same as the bars for the MODERN voice in Figure 2. Thus, this picture seems to suggest a full effect of modifying the intonation patterns of the MODERN and ÅRHUS voices – full effect in the sense that the level of identification is the same for the modified voices as for the non-modified voices.

The [CONSERVATIVE > ÅRHUS] voice, however, is not to the same degree perceived as an ÅRHUS voice, especially not by the ÅU respondents. One might speculate whether this in some way is related to the finding that the Copenhagen-association is more frequent for non-modified CONSERVATIVE than for non-modified MODERN (see Figure 2).² If this is the case, the implication is that a

² This is the inverse picture of what we saw in the LANCHART data (see the introduction section), where it was MODERN that was associated with Copenhagen more frequently than CONSERVATIVE. The LANCHART data which includes the ÅRHUS accent as representative of LOCAL speech was collected among 9-graders (15–16 years old) in the small town of Odder just south of Århus. Given as an average for the four voices which represented each of the three accents, the Odder youngsters allocated the voices to Copenhagen as follows, in percentages: MODERN 71,3, CONSERVATIVE 50,9, ÅRHUS 18,0 (see Kristiansen 2009: Table 4). The percentages for the three voices that we have used in this experiment were: MODERN 65,5, CONSERVATIVE 40,2, ÅRHUS 8,6 (see voices Mb11, Cb1 and Lb9 in Table 3 in Kristiansen 2009). Notwithstanding the possibility of a methodologically motivated favoring of a 50–50 distribution for CONSERVATIVE in the LANCHART data, as discussed in Footnote 1, it seems clear that there is a difference in how the CONSERVATIVE accent is perceived in terms of geographical provenance: 9-graders in a suburb to Århus are far from associating CONSERVATIVE with Copenhagen in the same way as university students of Danish in Århus (and Copenhagen alike). Whether the difference is to be seen mainly as an effect of age or of education, we cannot say, but in any case we find it plausible that the association ‘CONSERVATIVE–Copenhagen’ is more common among university students of Danish than among 9-graders (all social categories included). The inverse finding would seem less plausible.

modification of the intonation pattern is not enough to change a CONSERVATIVE-speaking young Copenhagener into a young man from Århus – not enough in the ears of all (i.e. not enough to equal the level of identification reached by the non-modified ÅRHUS voice).

For a further discussion of this, it may be useful to take a look at our data from the second task, in which respondents assessed the voices as either ‘natural’ or ‘artificial’. The results from this assessment are shown in Figures 4 and 5. As explained above (section on stimulus voices), recordings may differ with regard to how easily the F0 pattern can be re-synthesised without adding an artificial touch to the voice. In order not to confound its possible effects with the studied effects of modifying the stress group patterns, we did what we could to control for this factor by using re-synthesised F0 contours also in the non-modified voices. In the second phase of the experiment, we sought information on how successful the re-synthesizing had been by asking the participants to assess the voices in terms of naturalness/ artificiality.

By comparing the results in Figures 4 and 5, we see that more respondents thought the voices sounded ‘artificial’ in their modified version than in their unmodified version – with the one exception that there was no difference in how CU students heard the two versions of MODERN. Our first suggestion as to why we get more ‘artificial’ judgements for the modified voices will of course be that the modifications were not fully successful in a *technical* sense. This is probably the main reason for the results of the experiment.

But we can also speculate whether more respondents heard the modified voices as ‘artificial’ in a *social* sense because the modifications created some kind of mismatch which broke the ‘natural’ combination of intonation and segmental characteristics. This speculation seems particularly pertinent in the case of the modified Copenhagen voices. The [CONSERVATIVE > ÅRHUS] voice was deemed ‘artificial’ by a majority of both ÅU and CU students, and by considerably more than was the case for the [MODERN > ÅRHUS] voice (see Figure 5). At the same time the [CONSERVATIVE > ÅRHUS] voice was less often allocated to Århus than the [MODERN > ÅRHUS] voice, especially by ÅU students (see Figure 3). This might indicate that ÅRHUS intonation perceptually combines less ‘naturally’ with CONSERVATIVE segments than with MODERN segments.

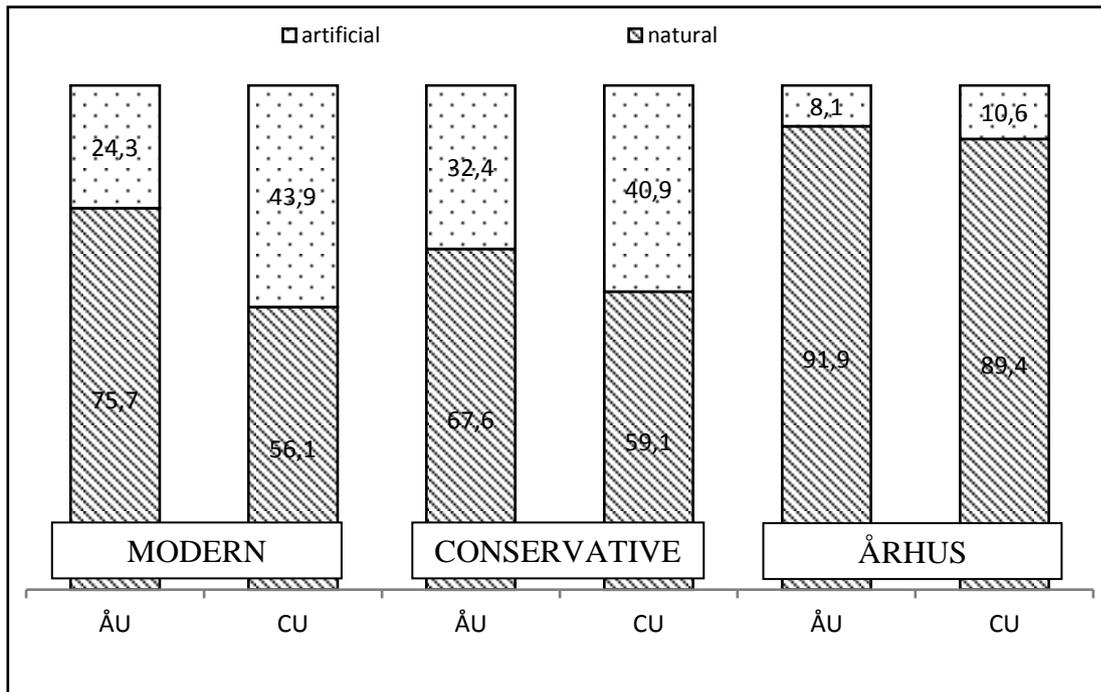


Figure 4: Assessment of the non-modified voices MODERN, CONSERVATIVE and ÅRHUS as ‘natural’ or ‘artificial’ (shown as percentages) – by students of Danish at ÅU (n=37) and CU (n=67). The difference between ÅU and CU is statistically significant for MODERN: (Pearson Chi-square 3,918, df 1, p=0,048).

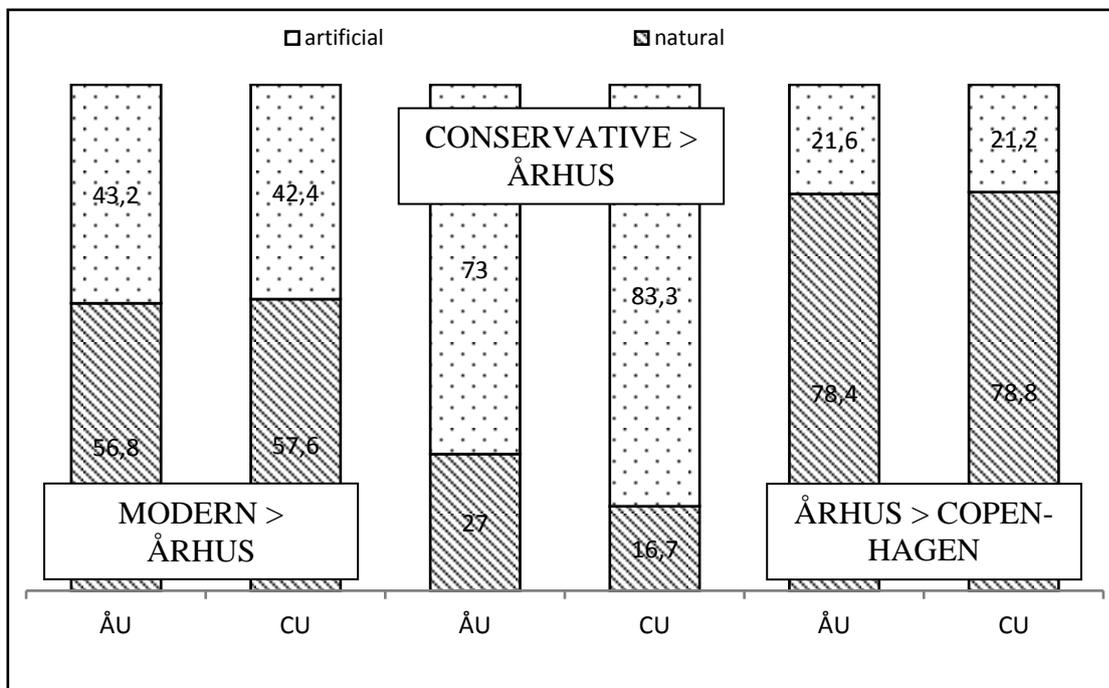


Figure 5: Assessment of the modified voices [MODERN > ÅRHUS], [CONSERVATIVE > ÅRHUS] and [ÅRHUS > COPENHAGEN (MODERN/CONSERVATIVE)] as ‘natural’ or ‘artificial’ (shown as percentages) – by students of Danish at ÅU (n=37) and CU (n=67). The difference between ÅU and CU is statistically non-significant as far as all three accents are concerned.

As the perhaps most likely source for such a perception, we might look for the existence of a clear frequency difference between CONSERVATIVE and MODERN segments in young Århus speech. The empirical evidence with bearing on this issue is limited and stems from a variationist study conducted as far back as in 1989/90. The (C/M)-variation was studied on eleven variables which showed percentages of MODERN variants ranging from 98 to 11, and (if summed up and divided by the number of variables) a total of 61% MODERN vs. 39% CONSERVATIVE variants (based on Table 29 in Nielsen 1998). Thus, the Århus distribution seems to be in harmony with the general finding that young Danes favour MODERN variants over CONSERVATIVE variants as Copenhagen speech spreads throughout the country. However, it is of course another question what consequences such a distributional difference may have when it comes to perceived ‘naturalness’ of how intonation combines with segments – not the least because we have no information about how the studied variables differ in terms of either occurrence in running speech or general salience in the speech community.

Instead of developing these speculations, we might do better by noticing that the modified CONSERVATIVE voice actually sounds to our ears as if it shifts from Århus intonation to Copenhagen intonation towards the end of the clip. This perception is hard to explain as the stress group pattern was changed here as well, and we do not see how it could be explained by the co-occurrence of other features in the signal. Nevertheless, a perceived shift in intonation in the course of the utterance may well be the reason why this voice was judged to be ‘artificial’ by the majority of the participants, and may indeed also explain why the voice was less often allocated to Århus than was the case for the modified MODERN voice (see Figure 3). As the end part of the modified CONSERVATIVE clip sounds like Copenhagen speech in spite of the F0 contour in the final stress groups, this might have opened the option of allocating the voice to Copenhagen, if the allocation was made on the basis of what was heard last.

Some further remarks can be added to the results for naturalness. Figure 4 shows that the *non-modified* voices were predominantly categorised as ‘natural’. There was a general agreement, across CU and ÅU students, that the MODERN and CONSERVATIVE voices (i.e. the Copenhagen voices) sounded less ‘natural’ than the ÅRHUS voice. Arguably, this somewhat strange result may be an indication that a number of the respondents have been influenced by value-judgements in terms of ‘naturalness’ in a sense which is commonplace in much discourse about dialects and language standardisation. Coupland’s (2001, 2003) account of different sociolinguistic authenticities might be relevant here where language

perceived as ‘vernacular’ is associated with a specific type of authenticity. When answering the questions about ‘artificiality’ and ‘naturalness’, the respondents may not have offered an assessment of the technical quality of the clips, but an evaluative upgrading of ÅRHUS as more authentic than MODERN and CONSERVATIVE. On the other hand, this interpretation of the data is not consistent with the fact that the modified voice [ÅRHUS > COPENHAGEN] is also judged much less artificial than the other modified voices. This voice is perceived as being from Copenhagen, which means that ‘vernacular authenticity’ is probably not involved in this judgment. It seems therefore that even though ‘vernacular authenticities’ may play a role here, other factors are more important.

Other social values and associations are likely to have played a role, however. Not least the results for the MODERN speaker strongly indicate that other considerations than technical-quality ones were involved in the assessments, as he was judged just as ‘artificial’ in his *non-modified* version as in his *modified* version (see Figures 4 and 5). Among the three accents involved in this experiment, MODERN Copenhagen speech is clearly the one which is treated most negatively in overt social discourse. Perhaps this association was more readily triggered among the CU students than among the ÅU students, so that their more frequent characterisation as ‘artificial’ – as the only (possibly) negative answering option – should rather be seen as a more conscious dissociation from MODERN Copenhagen speech. It remains a crucial task to develop methods that allow for better inclusion – and control – of the subjective forces in play in such experiments.

CONCLUSION

The described investigation represents a first step towards an empirically based understanding of the role played by intonation in the recognition of contemporary Danish accents. We do think our results represent quite strong empirical evidence that intonation plays a crucial role when Danish listeners make judgements about where Danish speakers come from. Modification of the stress group patterns in the stimulus voices was sufficient to make many informants allocate them to different places in the country: When furnished with an Århus intonation, Copenhagen voices were perceived by the majority as coming from Århus, whereas the Århus voice was perceived as coming from Copenhagen when the stress group pattern had been modified in accordance with what has been described for read speech (Grønnum 1992). In sum, we find it safe to claim that

our investigation sustains a view of intonation as an important – probably the most important – marker of regional difference in contemporary Danish.

Furthermore, we think that the described investigation represents a substantial empirical contribution to our theorising on the role played by intonation in linguistic (de)standardisation processes in Denmark. From the LANCHART SEE studies we knew that the Århus area adolescents, in subconsciously offered reactions to differently accented speakers, find Århus speech to be both distinguishable from and less desirable than Copenhagen speech. Now, after having conducted the experimental study presented in this chapter, we also know that intonation is important to the perceptual and evaluative distinction between Århus and Copenhagen speech. We therefore feel safer than before when claiming that intonation is a constitutive element of young Danes' notion of 'best language', and, if language ideology in terms of 'good and bad' is accepted as a major driving force in language change, we also feel safer than before when claiming that the social indexicalities of different intonation patterns are an important factor in the rampant linguistic standardisation that characterises Danish society.

In publications from the LANCHART project, we have repeatedly argued that our results seem to indicate that covert (subconsciously offered) attitudes are a decisive driving force in the radical 'Copenhagenisation' of the Danish speech community (with the further perspective that this may be true of language variation and change in general; e.g. Kristiansen 2009, 2011; Kammacher, Stæhr and Jørgensen 2011; Maegaard, Jensen, Kristiansen and Jørgensen 2013). In accordance with this thinking, our expectation would be that LOCAL prosodies – if these continue to be negatively evaluated – will wane away and eventually disappear. In which case Denmark will no longer feature linguistic differences in the geographical dimension. Indeed an interesting question for the future.

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