

THE SOCIOCULTURAL VALUE OF FO-VARIATION IN BRITISH AND AMERICAN ENGLISH

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ABSTRACT

The paper reports on a number of acoustic experiments with focus on FO-parameters. The aim of the research is to determine which of the sociocultural connotations established for FO-code in British English are valid for the American context. It is an attempt to differentiate nationally specific regional and sociocultural constraints on FO-variation. The FO-parameters are: FO-max, FO-mean, FO-range, FO-variability and FO-combinability with intensity and duration. The social correlates are: regional background, social status (occupation), age, gender. The results of the comparative analysis suggest that North vs. South regional distinctions as well as higher vs. lower social status, together with age characteristics, follow the same trend in both varieties of English while gender (sex)-differentiating features, apart from the obvious FO-means, tend to be nationally culture-distinctive. The phonetic data are linguistically and socioculturally evaluated.

1. PREVIOUS WORK ON BRITISH PROSODY

1.1 Introduction. The present paper sums up FO-evidence accumulated in the author's own and her doctorands' research works for around two decades on regional and social FO-variation in English.

The British corpus consisted of 250 samples of taperecorded speech represented by 125 speakers, each text is 2-3 min long. The material was submitted to auditory (a. native speakers, b. trained phoneticians) and instrumental analyses (Intonograph, IBM Visual Speech, WinCecil-2).

A system of social factors have been consistently correlated with prosodic parameters: regional background, social status (occupation), social roles (authority, non-authority, solidarity), formality of the situation, speaking styles, age and gender (sex). Thus the fundamental tenets of the sociolinguistic theory have been tested and proven pertinent for the all-important FO variation in English.

1.2. Regional Background. Starting from regional affiliation of British English speakers, University undergraduates from London, Edinburg, Manchester, Liverpool and other local colleges we discovered two important features which characterize regionality in terms of prosody:

One. Narrow FO-range as compared to that of RP. Cf. the group means data (in semitones):

RP	14
Midland	6
North	7
Scotland	7
North. Ireland	6

Wales

9

Two. FO-contour leveling-out as evidenced by frequent use of level FO-configurations registered both in the terminal and pre-terminal parts of the contour. In recent computer programs this parameter is measured as "FO-stability" which is the opposite to "FO-variation"[1].

On the territory of the British Isles the following major geographical divisions can be ranked according to the degree of FO-stability, i.e. monotone, distinct from RP (in per cent):

North	32.40
Scotland	30.50
North. Ireland	28.80
Midlands	26.60
South	21.10
Wales	16.70

Geographical proximity to large urban centers may affect FO-range values of speakers considerably, as was shown in Scotland and in the South of England. Cf. FO data in speaking and reading (in semitones):

	reading	speaking
London	14	11
South England	11	9
Edinburg	7	6
Central Scot.	5	4
Glasgow	7	6
North Scot.	6	5

1.3. Social Status (occupation). Although we proceeded from the geographical dimension with the purpose of defining regionlect first, our ultimate aim was to find all the social constraints which may influence the speech habits of an individual in a certain speech community, i.e. challenge the problem of defining communalelect, or sociolect, prosodically. In fact, by selecting residents of the same areas with a higher social status, better education and older age we obtained data testifying to the fact that the social constraints appeared to override the regional ones: there was a definite trend towards a wider FO-range, a lower FO-mean, accompanied by slower tempo and a wider range of FO-configurations. Cf. the two group means data for FO-mean (in Hz), FO-range (in semitones), and mean syllable duration (in msec) in speaking:

	FO-mean	FO-range	Syll.d.
working class	148 Hz	5 st	175 msec
middle class	118 Hz	7st.	208 msec

Following the same method of narrowing down the social constraints which limit the linguistic behavior of the individual, we explored the change in prosody determined by various situations, formal and informal, and in performing different social roles (authority, non-authority, solidarity). Over and over again we corroborated the two findings which concern, in the first hand, FO-range and FO-variability parameters. However, there was ample evidence of other prosodic parameters co-variance for they were all the resulting effect of a number of social factors interacting and interfering with each other, and with the psychophysical possibilities of an individual, thus creating a complex picture of personality identity in each particular instance.

1.4. Age. Young people at the age of 20 display the greatest number of regional features in prosody: a narrow FO-range, a wide intensity range which in conjunction with a lower mean intensity level results in abrupt bursts of energy; shorter syllable and tone-group duration, and a combination of contrasting very short and very long pauses producing the effect of faster, varied tempo.

Acoustic descriptions of both men's and women's voices show how FO-range widens with age until it reaches its maximum in middle age; it may narrow again in old age but not necessarily so. In our corpus the voices of 80-year-old men who continue their social activity still preserve their relatively high intensity level but the tempo is slower, and there's a high proportion of gradually descending and leveled-out FO-configurations: the FO-range becomes narrower.

50-year-old men and 40-year-old women in the middle class groups appear to possess the greatest amount of positively assessed acoustic characteristics. Cf. the results of 20 middle class male speakers in five age groups:

Age	FO-mean in Hz	FO-range in semitones	mean syllable in msec
20	105	6.5	177
30	146	6.6	181
50	119	7.0	208
60	127	6.8	217
80	121	6.6	220

1.5. Gender (sex). One more issue: cultural expectations with regards to prosodic forms of men's and women's performances. It was found that apart from the obvious FO-mean differences conditioned by the structure of speech organs, there were differences in FO-range: British women tend to employ a narrower FO-range than British men. Thus, for instance in the groups of 10 young men and 10 young women of equal social status, at the age of 18-21, men's average FO-range exceeds that of women's by 3 semitones. Given the customary narrow range of young age compared to middle age data, the 3-semitone difference is impressive.

1.6. Conclusions. Summing up the results of the experimental work concerned with British prosody we can state with confidence that increase in FO-range at the expense of both higher and lower registers, which also involves lower FO-mean and

higher FO-variability accompanied by slower tempo may symbolize:

- South vs. North
- large urban centers vs. small towns
- higher social class vs. lower social class
- middle age vs. young age
- men rather than women
- reading vs. speaking
- formal speech rather than casual speech
- the role of authority vs. non-authority or solidarity roles.

It is important to note here that not only mean values of the parameters are diagnostic of social group affiliation but the relative values, the ratio between accented and unaccented syllables data may be crucial too: RP speakers have a much greater FO contrast which accounts for their sharp speech rhythm created by accent. Regional speech is characterized by the monotony of levelled-out configurations, or FO-stability in acoustic terms, brought about by minimal contrast between the accented and unaccented syllables.

2. RECENT WORK: AMERICAN PROSODY

2.1. Introduction. The American corpus was represented by 69 speakers who produced 138 samples in reading an identical text and a spontaneous monologue.

At the time of the recording the subjects were all middle class speakers, citizens of Anchorage, with a diversity of regional backgrounds: North, North Midlands, South, West, Alaska [2].

The recorded texts were assessed by residents of Anchorage (another set, but also with different regional backgrounds) along the following lines: 1. standard 2. standard with a slight accent 3. standard with a strong accent.

Auditory analysis made by expert phoneticians established dominance of level FO configurations which gave way to a variety of other contours in higher status groups.

For instrumental analysis a sentence was selected, about 60 sec long, consisting of 4 intonation groups, pronounced by the speaker 40 sec after the start. The data were processed at the "Lingua Interface" Laboratory at Moscow Linguistic University on PC with a computer program 80L87 devised by Moscow Energy Institute Research Center.

The results of auditory analysis carried out by native speakers appear to be very symptomatic: they reveal the judges' awareness of the existence of a certain norm, their loyalty to the local type of accent, as well as tolerance towards other people's accents. It also shows that although there is a diversity of regional accents which accounts for a particular bias towards an accent they identify with, the northern type was steadily rated as second, while the southern accent was marked as having the greatest amount of difference from the standard. Statistically these attitudes can be thus represented: Alaska - 1 (the standard), North - 1.4, North Midlands - 1.5, West - 1.5, South - 1.8 (all within the group of a slight regional accent).

There were cases of conflicting identity when the social background of the speaker was high, and the traces of regional accent were minimal: in the group of southern speakers a lawyer's speech was rated as having the smallest amount of difference from the standard. Age can also be a social factor which

affects the impression of regionality as deviation from the standard: young people at the age of 20-29 are reported to have it to a greater extent than speakers of mature age of 40-49.

2.2. Regional background. Prosodically, according to the mean FO-range parameter data the regional groups ranked as follows: Alaska and the North possess the narrowest mean FO-range, while the South is distinguished for the highest values, with Northern Midlands and the West occupying the two intermediate positions. Cf. (in semitones):

	men	women	all
South	9	15	12
Midland	9	9	9
West	8	10	9
North	7	8	8
Alaska	6	8	7

The evidence suggests that the American standard, unlike the British one, is associated with a narrow FO-range. Geographically, however, there emerge two similar tendencies common for the two national varieties:

One. People in the North utilize a narrow FO-range, while in the South the FO-range is wider.

Two. People in the South speak slower than residents of the North.

The latter notion can be illustrated by the data on mean syllable duration in reading and speaking in men's group (in msec):

men	reading	monologue
South	335	259
Midland	294	212
West	348	214
North	281	223
Alaska	282	229

It should be noted, however, that in women's group the opposition North - South is consistently preserved only in reading: 274 msec vs. 283 msec, while in talking the tendency is practically reversed, as testified by syllable duration: 233 msec vs. 221 msec.

Generally speaking, the style of reading a standard text facilitates the alienation of a number of interfering situational contextual factors which might occur in talking. It is a style which is closely connected with literacy, education, culture.

2.3. Social status. By correlating FO data with occupational factors we could discover the sociocultural value of FO-variation in three middle class strata: upper middle (mayor, company president, bank managers, lawyers, city council executives); middle middle (self-employed in small businesses, teachers, servicemen, technical workers, office workers), lower middle (salesmen and saleswomen, secretaries, clerks, students). Cf. the data in reading (in semitones):

men	mean FO range	max FO range
upper middle	7	12
middle middle	8	11
lower middle	6	9

women		
upper middle	10	14
middle middle	9	13
lower middle	7	12

2.4. Gender. Women's monologues are also graded according to the social class distinctions while men's performances are exceptionally uniform practically in all the groups. Another important feature may be demonstrated working here instead: FO-mean parameter which is normally lower in higher social groups. Cf.:

men	mean FO-range in st	max FO-range in st	mean FO in Hz
upper.	6	11	102
middle	6	10	111
lower	6	11	126
women			
upper	8	14	185
middle	7	12	227
lower	6	11	198

Among the features which prove to be opposite to our expectations is a wide FO-range of women as compared with that of men: the average data for women goes up to 13 st against 11 st in the group of men. American women represented in our data can definitely , unambiguously be described as possessing a wider pitch range than men. They demonstrate it in all the regional and social groups, in both styles, reading and speaking, and in three age groups, with the exception of the youngest age group (19-29) and the lower middle class in monologue.

2.5. Age. Age differentiation follows the same trend we observed in the previous work with the British data: women reach their peak at the age of 40, or perhaps a little earlier in the group of American women: 30-39, while men reach their high values at the age of 50 and then keep it up until over 60. Cf. max. FO-range in semitones:

men		women	
50-65	12	30-39	15
40-49	10	50-65	13
30-39	10	40-49	12
19-29	10	19-29	10

3. DISCUSSION

We can now consider possible linguistic and sociocultural implications of the phonetic facts collected in cross-cultural studies of FO variation.

In the hierarchy of language varieties, such as dialect, regionlect, communalect, or sociolect, familialect and, finally, idiolect [3] the first four entities were selected for detailed prosodic analysis with focus on FO-variation. An attempt was made at establishing linguistic, or rather prosodic, identity of the following varieties: the two national dialects, then their regionlects and, finally, the communalect of the city of Anchorage with its sociolects of three middle class strata, further specified as to the gender and age group affiliation, in two modes of speaking: reading and monologue.

With reference to national culture-specific prosodic features of American English, namely, level FO configurations, specific accent and rhythm patterns, temporal and non-fluency phenomena, which account for monotony and smoothness effect, we have found more evidence suggesting that these prosodic properties are shared by a number of British regional accents, such as Northern, and, particularly, Scottish and Irish regionlects.

There are also a few sociocultural connotations of FO-variation that are valid both for the British and the American contexts. These are the tendencies for the following FO manifestations: wider FO-range, greater FO-variability, lower FO-mean, accompanied by slower tempo which may be indicative of southern vs. northern regional background
higher social class vs. lower social class
middle age vs. young age
reading vs. speaking.

Culturally specific are prosodic forms of women's speech: British women employ a narrower FO-range than British men, while American women possess a wider FO-range than American men. The interval between men's and women's speaking ranges is especially great in the South and in the West.

As most of the data on American prosody were derived from Anchorage recordings and respondents' answer sheets, their cultural implications call for special comment. Residents of the city demonstrated their loyalty to the local accent by giving it the status of the standard, their awareness and tolerance of other people's accents by placing them all in the group "with a slight accent", but in their actual speech they use all the prosodic forms of their own regional standards. Thus the identity of communities with historical, cultural and linguistic heritage can be diagnosed through speech habits of the communicants, even in the circumstances of their mobility. The fact is that speakers are generally aware of differences in the pronunciation of vowels and consonants, while prosody variation may be modified less consciously.

One more important observation: not only the residents of Anchorage but also other American respondents claimed that the local accent is the standard, while the northern accent was invariably ranked second. That may be another proof of, in the first place, of local patriotism, and, in the second, that the accent of the North which is associated with the Network actually plays the part of "the informal standard" [4] common for many speakers of American English.

It may not have the same prestige RP has in Great Britain but it is certainly valued as a cultural asset, which, as evidenced by FO_data, can be further differentiated socially.

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