HIERARCHIES OF DIALECT FEATURES IN A DIACHRONIC VIEW – IMPLICATIONAL SCALING OF REAL TIME DATA

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1. Introduction

If one considers the German language area, the question of what diachronic changes occur in dialect features when speakers intend to use standard language is an as yet unanswered one. The same is true internationally. The reasons for this omission are – at least in the German-speaking countries – twofold. Firstly, the focus of German dialectology has for a long time been fixed on the geographically organised documentation of local dialects. On occasion, these dialects were considered suitable sources of information on the spatial distribution of historical or cultural phenomena and occurrences. Similarly, they have been regarded as an information source for long-term topodynamic processes (cf. Aubin/Frings/Müller 1926). At the same time, the range of variation between the poles of the standard–dialect axis has been largely ignored. Secondly, we have an empirical problem, the crux of which is: How is it possible to obtain empirical data from an authentic situation without disturbing the situation through the presence of an investigator? This is what Labov called the "observer's paradox" (Labov 1970, p. 47). Since the first reason for the omission is dependent upon the latter, we can say that the main problem is the empirical one. The question of which variative states when prevail between standard and dialect is thus also primarily an empirical one. Given this empirical difficulty at a synchronic level, it is not surprising that no diachronic data have been found which might offer us an impression of the changes affecting a particular register lying between dialect and standard over time. It is, however, possible to find such data. The aim of this paper is to present the results of an analysis of data taken from a fixed, authentic context that can – in Germany at least – be observed diachronically in real time.

The investigation is focused on the city of Mainz (with nearly 200,000 inhabitants), located in the Middle Western dialect region of Germany (i.e., in the Rhine Franconian area) in the vicinity of the city of Frankfurt/Main (i.e., Hesse). The aim is to seek out segmental phonetic features which deviate from standard language and are either sensitive or resistant to diachronic change. Going further, the study seeks to determine whether the most stable features can be synchronically integrated into a hierarchy that, firstly, provides evidence for a base repertoire of regional features in intended standard language and, secondly, gives evidence of the degree of sensitivity to reduction of individual features. Through this, such a hierarchy should be able to offer information on possible future developments. The technique used to determine the hierarchies is that of implicational scaling.

2. Data

The data for the following real-time analysis are drawn from the recordings of city council meetings. Such recordings are kept in virtually all German cities of 20,000 or more as an aid to the minutes taker. Occasionally, they have been archived for years or even decades (cf. A. Lameli 2004a). In some cities we can look back over approximately fifty years. We are thus dealing with material that offers a diachronic perspective and, further, was created for non-scientific purposes. The former aspect grants us the rare opportunity to compare spoken-language data from different points in time that are methodologically speaking homogeneous. The latter aspect is of a particular

interest. A decisive feature of the situational frame is that the speakers are neither aware of any scientific interest in their utterances nor of the fact that they are being recorded. Even where the informants register the microphone in front of them, they are cognisant only of its function as an amplifier, not as a recording device. Moreover, the microphone is simply one small part of a complex situational frame and is not an extraneous item introduced by an interviewer. In this sense then, we are not observing a situation that has been adapted to meet scientific requirements, thus making it possible to avoid the observer's paradox. Methodologically we can talk about an external observation.

As they themselves report, the councillors are oriented toward the standard language (cf. Lameli 2004b), which can be attributed to the formality of the context. Even though the macro-situation is clearly defined – that is, the same group of people with similar expectations take part in all the meetings, which are always held at the same place, and discuss similar topics, etc. – differing micro-situational conditions lead to different types of speech (persuasive, approval-seeking, etc.). This makes it necessary to follow the principle of micro-situational constancy in trying to analyse the data. In the current study, this means that the informants have to be speaking freely but not emotionally, for instance. We can control for the former by choosing certain types of speech (e.g., reports) and for the latter by choosing certain topics in the course of the meetings (e.g., administrative matters).

The recordings used for the following study are from the 1950s and the 1990s. The data examined are sequences of at least 200 words (approximately 170 types) from every speaker in a context that is clearly defined by the intent to speak standard German (business-like speech). Since the councillors are very accustomed speakers of standard language,[1] the dialect features that appear in such sequences can be assumed to be the most typical nonstandard features in the regional accent of the Rhine Franconian area. A first sample was taken from the years 1956 and 1959, a second was taken from the years 1994 and 1995. All in all, the diachronic comparison encompasses a time span of 39 years. All of the informants were born in the city of Mainz. Further, as members of the town council they are also members of a particular social group that is defined by political activity. As elected representatives of the citizenry they enjoy a certain prestige that is, at a minimum, attributable to the fact that they are known in the city.

3. Linguistic analysis

3.1 Distribution of frequency

A preliminary insight is gained by working through the samples, summarising and categorising every single segmental phonetic dialect feature. Doing so for both samples gives us a synchronic set-up of the relevant dialect features. The most frequent systematically describable phenomena are taken into consideration in the subsequent analysis. A comparison of the sample from the fifties with that from the nineties allows a diachronic view. The table below contains the phonological variables for which dialect variants are most frequently realised in both samples. The table can be read as follows: on the left, the respective phonological variables[2] together with a characteristic German word and its English translation ("example") are listed. The column headed "$\Sigma_{nonst.}$-S1" displays the relative frequencies of all the dialect variants found in the first sample (from the fifties). The next column shows the same distribution for the second (1990s) sample. Subsequent columns list the difference between the two samples (|S1-S2|) and the proportional reduction (as a percentage). In the final column the level of significance is reported.[3]

In all, there are five variables which concern vocalic features in stem syllables (1 to 5), two variables related to vocalic features in subordinate syllables (6 to 7) and nine variables involving

consonantal features (8 to 16). Taken together, these variables furnish the typical dialect repertoire of the samples.

	variable	example	$\Sigma_{nonst.}$-S1	$\Sigma_{nonst.}$-S2	$diff^{S1}_{S2}$	reduction	level of significance
1	{#, K}_/y, ʏ/_K	*Brücke* (*bridge*)	12.3%	4.4%	7.9%	-64.2%	*
2	{#, K}_/ø, œ/_K	*Vögel* (*birds*)	7.9%	1.7%	6.2%	-78.5%	n.s.
3	K_/ɛ/_{K\ /r/}	*Fell* (*fur*)	18.6%	5.2%	13.4%	-72.0%	*
4	{#, K}_/a/_N	*am* (*on, at*)	37.5%	7.4%	30.1%	-80.3%	**
5	(N)_/a͡e/_(N)	*Leine* (*lead*)	28.7%	7.4%	21.3%	-74.2%	**
6	#_{/g,b/}_ə_#_F	*gesagt* (*said*)	27.3%	5.1%	22.2%	-81.3%	**
7	K_ɐ_#	*Vater* (*father*)	20.0%	11.2%	8.8%	-44.0%	*
8	#_/z/_V	*Sonne* (*sun*)	91.9%	68.1%	23.8%	-25.9%	**
9	{L, N, V}_/z/_{L, N, V}	*unser* (*our*)	85.3%	53.5%	31.8%	-37.3%	**
10	V_/s/_V	*Wasser* (*water*)	62.0%	38.9%	23.1%	-37.3%	*
11	{#, V, K}_/ç/_{#, V, K}	*ich* (*I, me*)	80.3%	63.1%	17.2%	-21.4%	**
12	{#, V, K}_/ʃ/_{#, V, K}	*Tisch* (*table*)	58.3%	39.5%	18.8%	-32.2%	**
13	V_/x/_V	*machen* (*to do*)	92.9%	48.6%	51.4%	-47.7%	(*)
14	{/i, e, y, ø/}_/g/_{V, K, #}	*biegen* (*to bend*)	48.7%	4.0%	44.7%	-91.8%	**
15	{/a, o, u/}_/g/_{V, K, #}	*Wagen* (*vehicle*)	75.8%	15.8%	60.0%	-79.2%	**
16	{#, P, L, N, V}_/t/_V	*hatte* (*had*)	70.0%	32.5%	37.5%	-53.6%	**

Table: Frequency distribution

As figure 1 shows, the variables most often realised as dialectal variants in sample 1 are variable 13 (92.9%) and variable 8 (91.9%). While the former involves the voiced pronunciation of the standard unvoiced /x/-phoneme in intervocalic position (e.g.: [ɣ, x̬]), the latter refers to the unvoiced pronunciation of the standard /z/-phoneme in word-initial position before a vowel (e.g.: [s, z̥]). This is also the dialect feature with the widest geographic distribution; it is valid for almost all of the South and Middle German area (cf. König 1989 vol. 2, p. 63, 241-245). On the other hand, the variables with the lowest number of dialectal realisations in sample 1 are variable 2, the non-rounded realisation of the rounded standard vowels /ø, œ/ (e.g., [e, ɐ̯]), with (7.9%) and variable 1, the non-rounded realisation of the rounded standard vowels /y, ʏ/ (e.g., [ɪ, ɪ̯]; 12.3%). None of the sixteen features is exclusive to the city of Mainz. On the contrary, every feature is typical of, at a minimum, the Rhine-Franconian dialect area – for example, the coronalisation[4] of the standard consonant /ç/ as e.g. [ʃ, ʂ] (11) – or even the whole West Middle German, indeed most of the High German area – like the /z/-phenomenon discussed above. The second sample presents a similar picture. Variable 8 is among the most frequently nonstandardly realised variables, whereas variable 2 is the variable with the lowest frequency.

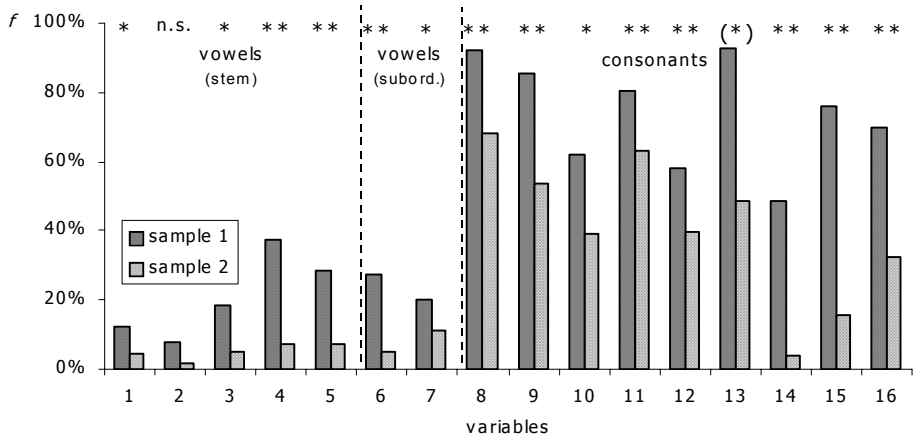

Figure 1: Distribution of nonstandard realisations per sample

What is most striking, however, is the really clear reduction in the frequency of the dialect realisations from sample 1 to sample 2, in other words in the nineties compared to the fifties. As figure 1 shows, the number of dialect pronunciations is reduced for every variable. Taking into account the preceding table, it becomes clear that in nearly every case we find a clear reduction in the frequency of these nonstandard variants at a statistically high to very high level. Some of the reductions are enormous, as with variable 14 (-91.8%), variable 6 (-81.3%), variable 4 (-80.3%), or variable 15 (-79.2%), for instance. The sole exception is the second variable, where the reduction is statistically nonsignificant. But it is manifest that in this case the proportion of dialect realisations is already at a minimum (7.9%) in sample 1. Further, this is also the feature with the lowest frequency in sample 2. Variable 2 aside, the lowest reduction is observable for variables 11 (-21.4%) and 8 (-25.9%), so that we can safely say that, all in all, we find a very high reduction in the number of dialect realisations.

A clear distinction emerges between the vocalic and consonantal features. Even at a first glance the preponderance of the consonantal features is obvious. In contrast, there is no highly visible difference between vowel in stem syllables and those in subordinate syllables. These findings are confirmed by calculating the average reduction for vowels and consonants. On average, the consonantal variables are reduced by 45.3% (from 73.9% to 40.4%), the vocalic variables in stem syllables are reduced by 75.2% (from 21.0% to 5.2%), and the vocalic variables in subordinate syllables are reduced by 65.4% (from 23.7% to 8.2%).[5] But it is not simply the predominance of the consonantal features that is conspicuous in both the first and the second sample, it should also be noted that the reduction in the nonstandard realisations of the consonantal variables is lower than that for the vocalic variables. This offers us evidence, firstly, that it is the consonantal material which characterises this intended standard language, and secondly, that this consonantal material seems to be diachronically more stable than the vocalic dialect features. Among these consonantal variables, in sample 1 we find almost 100% dialectal realisations (9, 13). Remarkable is the fact that even the consonantal variable with the lowest frequency of nonstandard realisation in sample 1 – the realisation of the standard /g/-phoneme as a fricative (e.g.: [ʃ, ɕ]) in a palatal context (14) – is more frequent (48.7%) than the most frequent vocalic feature in sample 1 (37.5%), the realisation of standard /a/ as a nasal or raised vowel (e.g. [ã, ɔ, ɔ̃]) before a nasal consonant (4).

All together then, we find a clear influence of dialect features upon councillor's speech. But it is obvious that the consonantal features alone are typical for this variety. Locating the variety on an axis between standard and dialect in view of the quantity of dialectal characteristics, it would be appropriate to describe the speech of the town councillors as a regional accent.

3.2 Implicational scaling

So far we have looked at the proportional distributions of nonstandard features in the corpus. With regard to making a prediction about the further development of the proportion of dialect features, it should be possible to establish a hierarchy of the most frequent phenomena. Such a hierarchy would give an impression of what features might be the most stable in future. The problem with such an endeavour is that we have until now been dealing with frequencies gained from the summation of all variants for the variables found in the corpus, i.e, we have not taken into account any information on the proportions of dialect features per speaker. But such information is useful if we want to know whether idiolectal characteristics have any influence. However, if we wish to take individual speakers into consideration, we need to look for other applications. One that might be useful is implicational scaling.

Implicational scaling aims – in contrast to frequency distribution – not to quantify the relative frequencies of nonstandard variants averaged across the whole sample, but the relative frequencies of nonstandard variants of all variables considered separately for each speaker. Moreover, the aim of an implicational analysis is to describe implicational relations between certain linguistic items.[6] It makes statements of the following type possible: 'If in a given context feature A occurs, we can expect feature B as well'. Hence, implicational scaling is not just suitable for ranking linguistic features into a hierarchy but also for interpreting the variables with respect to diachronic development. The method is rather simple. The relative frequencies of the dialect features for each speaker are turned into a binary matrix. This can be easily performed if the data can be grouped into binary classes in the sense of 'only nonstandard variants for speaker X' versus 'only standard variants for speaker Y'. This is an ideal case, which leads to a matrix within the informants are distributed in lines and the variables in columns. A value of 1 is entered in the appropriate cell if the frequency of dialect variants is 100%. In the reverse situation, where the frequency of dialect variants is 0%, a 0 is entered. Ideally, after rearranging the lines and columns to group cells containing the value 1, a hierarchy of particular features should become obvious. The following figure illustrates the raw matrix together with the necessary rearrangements.

		variables				
		a	b	c	d	e
speakers	I	1	1	0	1	0
	II	1	1	1	1	0
	III	1	1	0	0	0
	IV	0	1	0	0	0
	V	1	1	1	1	1

		variables				
		b	a	d	c	e
speakers	V	1	1	1	1	1
	II	1	1	1	1	0
	I	1	1	1	0	0
	III	1	1	0	0	0
	IV	1	0	0	0	0

Figure 2: Example of an ideal implicational scale

The right-hand table in figure 2 with the resultant implicational relations should be read as follows: The relatively rare variable 'e' implies variable 'c', 'c' implies 'd' etc. Put more formally, this can be described as e ⊃ c ⊃ d ⊃ a ⊃ b. In other words, it can be assumed, for instance, that if variable 'e' is found, then the variables 'c', 'd', 'a', 'b' can also be expected, or if variable 'd' is found, then the variables 'a', 'b' ought to be expected as well, but not the variables 'c' and 'e'.

But since variation is not binary in character, that is, since we do not just have frequencies of 100% or 0%, cut-off points are used from which one can round up to '1' or down to '0'. In the present case, the cut-off point is set at around 90%. That means, every frequency of about 90% or more is coded as 1, every frequency of 89% or less is entered as 0. Hence, the method is only suitable for looking at the most stable dialect features in the corpus. Naturally, this means that a great deal of

variation is hidden behind the value 0. Since we only want to look at the features which are stable over time here, this variation behind the '0' is acceptable.

Figure 3 shows the implication scale for the first sample. Both inside and outside of the implicational formation that is defined by the zigzag line there are individual deviations (marked in grey). If there are too many deviations, the scale is not valid and no implicational relation can be derived from it. It is thus necessary to calculate a coefficient of scalability which integrates all the deviations and all the 1 and 0 values.[7] As the table beside the implicational scale shows, the scale is significant.

In figure 3 the clear distinction between consonantal and vocalic features is striking: only consonantal variables are found inside the implicational formation (8 to 16); all of the vocalic variables (1 to 7) are outside the formation. On the one hand, the scale thus confirms what we have seen in the course of the discussion of the distribution of frequency, namely the predominance of the consonantal nonstandard features.[8] On the other hand, we are now able to set up a statistical hierarchy of dialect features for the fifties, with which we can expand on the previous findings. The scaling leads to the following implicational relations: 12 (*Tisch*), 14 (*biegen*) ⊃ 16 (*hatte*), 10 (*Wasser*) ⊃ 9 (*unser*) ⊃ 15 (*Wagen*) ⊃ 8 (*Sonne*) ⊃ 11 (*ich*) ⊃ 13 (*machen*). The hierarchy is sorted in a descending order from variable 13 through to variables 12 and 14 which stand on the same level, as is also the case with variables 10 and 16. Further systematic conditions should not be derived from the implicational formation; for the vocalic variables we have to assume a high degree of variation that cannot be further distinguished on the basis of the given implicational scale.[9]

speakers, sample 1	variables															
	(13)	11	8	15	9	10	16	14	12	1	2	3	4	5	6	7
13	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
14	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0
17	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0
16	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0
15	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0
5	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0
7	--	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0
10	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
6	0	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0
11	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
4	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0
1	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
9	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0
12	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0
3	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
8	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
18	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

cutoff= 90%
C_{rep}= 0.92
MM_{rep}= 0.29
% impr.= 0.63
scalability= 0.89

Figure 3: Implicational scale for sample 1

Of particular interest is the diachronic view, because this synchronic scale allows a diachronic interpretation that can lead to a prediction for further developments. It is in this sense that variables 12 and 14 are the most sensitive to reduction. As figure 3 shows, of the variables inside the formation, these are the ones for which the fewest speakers produce nonstandard variants. It is thus highly likely that variables 12 and 14 will be the next to disappear from the formation.[10] In light of the frequency distribution this is not very surprising, in that these are the consonantal phenomena

with the lowest frequency. On the other hand, the most stable variable is variable 13, which is produced with nonstandard variants by nearly every speaker, followed by variable 11. It is highly likely that the nonstandard variants of these two variables will also be the most stable in the future. In contrast, the variants of variables 12 and 14 – compared to the other consonantal variables – should be of a particular sensitivity to reduction and as such they should disappear from the formation. Additionally, it should not be assumed that any vocalic feature will be integrated in the formation. Since this is a real-time study, this prediction can be checked directly. The relevant results for the second sample are contained in figure 4 below.

In line with what one might expect, for sample 2 we find a quite different formation to that for sample 1. Once again, only consonantal variables can be related to one another, but in comparison to sample 1 there are clearly less variables integrated in the implicational formation. The following implicational relations are apparent: 10 (*Wasser*) ⊃ 9 (*unser*) ⊃ 8 (*Sonne*) ⊃ 11 (*ich*) ⊃ 13 (*machen*). The hierarchy is ranked in descending order, from variable 13 to variable 10. Also in line with expectations, the variables 12 and 14, which are at the edge of the implicational formation in sample 1, are no longer inside it in sample 2 and hence are no longer integrated in any implicational relations to other consonantal variables. Looking at the most stable variables, the ranking of the variables 13, 11, and 8 remains unchanged. So far, the predictions made on the base of the findings from sample 1 are verified. Bearing in mind that the speakers of the samples are different people, we find evidence, firstly, for the quality of the material used, and secondly, that implicational scaling is a useful technique for the prediction of linguistic states. Nonetheless, the disappearance of variable 15 should be mentioned. This variable, which involves the pronunciation of standard /g/ in a velar context, was a relative stable one in sample 1. To all appearances, in the course of time between the two samples, an attitudinal change has occurred, leading to a reassessment of the nonstandard variants.[11]

		variables															
		(13)	11	8	9	10	12	15	14	16	1	2	3	4	5	6	7
speakers, sample 2	5	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
	4	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	7	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	13	--	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	3	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	12	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	18	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

cutoff=90%
C_{rep}=0.97
MM_{rep}=0.11
% impr.=0.85
scalability =0.96

Figure 4: Implicational scale for sample 2

Another aspect which attracts attention is that all of the variables connected with a voiced/unvoiced pronunciation of the alveolar fricative (8, 9, 10) are integrated in the implicational formation. There is thus evidence for a systematic connection between the three variables; although such a

connection is not at all what one might expect: even if variables 8 and 9 are phonologically linked (cf. section 3.1), variable 10 is another case altogether. In place of standard /z/, the councillors mostly produce [s] in both the dialect and intended standard speech. So here we are dealing with the unvoiced realisation of a voiced sound in standard. On the other hand, in an intervocalic position, and in the same registers as /z/, standard /s/ (10) is realized mostly as [z]. What we have in this case is the voiced realisation of an unvoiced sound in standard language. Hence, we are not dealing with a merger of two phonemes, but rather a redistribution of different allophones. Nontheless, there are still two phonemes. For this reason, it should be concluded that the dialectal realisations of the alveolar fricative are to a high degree resistant to disappearance. But if this is the case, variable 10 probably marks the border of reduction, that is, in future we should probably not expect a further reduction in the implicational formation.

In addition, variables 11 and 12 should also be mentioned. In the dialect, these two variables have the same variants; dialect-speaking people in Mainz do not normally distinguish between standard /ç/ and /ʃ/. But the implicational scale of the second sample shows a clear distinction between the two variables. While variable 11 lies inside the formation, variable 12 is outside. Such a finding is understandable if one considers that one of the dialect realisations of both is [ʃ]. In other words, the speakers know the standard variant because it has an equivalent in the dialect. But on the other hand, they only know [ç] from standard language, because it does not exist in the dialect. That is, in the case of variable 12, the standard variant is known from the dialect, whereas this is not true for variable 11. The informants, primarily socialised in dialect, have to secondarily learn the [ç]-allophone, which leads to problems when they intend to speak standard language. Therefore, both the higher frequency and the stronger integration in the implicational formation of the nonstandard realisations of variable 11 are comprehensible.

On the basis of the two implicational scales, it becomes possible, under similar parameters, to make predictions about the further development of standard-oriented speech. Firstly, it is highly likely that the variables on the left of the formation will be the most stable in future. Secondly, from a formal point of view, it is likely that, if the implicational formation is further reduced, variable 10 will be the next to disappear. However, such a prediction can only be made with caution, as, for instance, the diachronic distribution of variable 15 shows. In addition, the particular resistance to disappearance of those variables connected to the dialect realisation of the alveolar fricative has been pointed out. In this case, however, it is not very likely that variable 10 will disappear from the formation. Moreover, it might also be that the implicational formation found in sample 2 is something like a definitive formation in the sense that the dialect features behind the variables within the formation constitute a base repertoire for consciously or unconsciously marking one's speech as typically regional. As a consequence, this raises the question of the salience of the single features (cf. Trudgill 1986, p. 11), which is a matter of social motivation and individual interpretation. In the case in question, it is highly likely that the features of the implicated variables have minimal salience (cf. section 4).

4. Outlook

The data for the foregoing study are drawn from an authentic context where speakers intend to use standard language. The analysis was focused on those dialect features that remain in this register. As the results demonstrate, the constancy of the situational frame lends itself to a diachronic view of a particular register, which could be described as regional accent. The comparability of the data from different time points is demonstrated not only by the frequency distribution, but also the implicational scaling. The fact that the implicational relations established for the samples from the

fifties and the nineties are quite similar – despite being produced by different informants – testifies to the validity of the real time study's conceptual structure.

The aim of the frequency distributions was a quantification of the relative frequencies of single variables. Further the difference in distributions between the samples from the fifties and the nineties was shown to be statistically significant. Subsequently, via an implicational scaling, the diachronically most stable variables were established and integrated into a hierarchy for each sample. In this step, hierarchical relations between the single variables can be statistically validated on the basis of a binary distribution of standard and nonstandard features. The implicational scaling indicates the frequencies of which nonstandard features in the speech of which speakers are above a predetermined cut-off point and, at the same time – since the variation for every speaker is taken into account – demonstrates that ideolectal influences on the main results are irrelevant. In this light, the implicational scaling is a suitable tool for determining the degree of variation in the dialect features in the corpus, and the implicational scaling with a cut-off point of about 90% produces a hierarchy of features with minimal variability. Moreover, as became clear, the implicative relations detected provide a suitable base for predictions about the future state.

Another question is that of the salience of the features examined. Assuming that the most stable features are less salient, the demonstrated diachronic change can be interpreted as a reduction in salient dialect features. That is, dialect features with a particularly high level of regional information about the speakers become classified – consciously or unconsciously – as highly inadequate for communication in the given formal context, which leads to speakers avoiding such features. Salience can thus be interpreted as the sensitivity to diachronic reduction of single features or single classes of features, as can be displayed by implicational scaling, for instance. To be more concrete, this means that the first nonstandard features to disappear from the speech of the councillors are the vocalic ones. These vocalic features are at the same time the features which are most characteristic of relatively small geographical areas. This is, for instance, the case with the realisation of standard /a/ and /a͡ɪ/ as nasals or raised nasals, which is typical of only the Rhine Franconian area, whereas the most frequent consonantal feature in the nineties, the unvoiced realisation of the standard voiced fricative /z/ (8), is a feature that is found across almost the whole Middle and South German area. In this regard, the consonantal features are clearly less sensitive to diachronic change than the vocalic ones.

Further, the findings of the present study allow us to assume that the synchronic variation detected represents an intermediate stage within a diachronic process converging on the standard language. Whether this convergence must be interpreted as a sign of an ongoing homogenisation on a path to something like 'zero dialectality', i.e., absolute congruence with standard language, cannot be determined. In the course of analysing the implicational findings, evidence was found that another reduction in the implicational formation is not necessarily anticipated. Further, on the basis of the social functions of regional sounds, for instance as markers of solidarity with a speech community, it is doubtful whether a complete absence of dialectality will ever be reached. Almost all speakers in the corpus produce phonetic features that give evidence of their regional origin. In this regard, those features which are shown here to be the most stable can be seen as the basic stock of dialect features that are used – consciously or unconsciously – to suggest regional identity to a certain communication partner. This basic stock is supplemented by the highly variable dialect features which lie outside of the implicational formations discovered, namely, vocalic features in the fifties and both vocalic and consonantal features in the nineties.

This marker of regional identity can be advantageous in all kinds of discourse strategies. Since regional identity at the same time implies social vicinity between communication partners, the

preservation of nonstandard features permits the relatively uncomplicated indirect expression of social vicinity. However, the extent to which this regional identity can be seen as a constitutive of the social acceptability of dialect features must – for the given case – be left open for further investigation. If we assume that such a social motivation for language use does operate, then the dialectal variants of the variables integrated inside the nineties' implicational formation will be the most stable in future. In this light, a further reduction in the frequency of their dialectal variants is not to be expected.[12]

5. References

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[1] Since the meetings presuppose a fundamental readiness for discussion, a well-versed communicative competence can, in general, be expected. Further, evidence for their ability to speak standard German can be seen in that fact that – anticipating results reported later – virtually no hyperforms are found in the meetings. On the term *hyperform* see Lenz, in this volume.

[2] Note that a hash (#) indicates the beginning of a new syllable or, more generally, the beginning or end of a word; C stands for consonant, V for vowel, F for fricative, L for liquid, N for nasal, and P for plosive; an underscore (_) is used to indicate the relative position of an element (usually a phoneme) in terms of being before or after some undefined element; braces ({ }) are used to group alternatives, whilst the backslash (\) marks an excluded item.

[3] * stands for α=0.01, ** for α =0.001, n.s. indicates 'non-significance'. For variable 13 in both samples the database is not really adequate, that is, in both samples there was one speaker for whom it was not possible to observe this phonological variable. Furthermore, most of the other speakers did not realise enough variants to be able to make robust statistical judgement and hence the level of significance is shown in brackets. Nevertheless the variable is listed, because its variants are typical dialect pronunciations for the region under discussion. Besides, it is nevertheless striking that virtually every speaker of the samples realises solely dialectal variants.

[4] For a thorough discussion of the term *coronalisation* see Herrgen 1986.

[5] It is interesting to see that the means of reduction correlate with the results of a measurement of dialectality that is based on the segmental phonetic features where a reduction of 50.8% is proved from sample 1 to sample 2. For a further discussion cf. Lameli 2004a and Lameli 2004c.

[6] For a thorough discussion cf. DeCamp 1971, Bickerton 1973, Bailey 1973, Rousseau/Sankoff 1978. See also Hatch/Farhady 1982, p. 179-186.

[7] Cf. Hatch/Farhady 1982, p. 180 f. The relevant coefficients for the calculation are on the right of the implicational scales. These are: "coefficient of reproducibility" (C_{rep}), "minimal marginal reproducibility" (MM_{rep}), "% improvement in reproducibility" (% impr.) as well as the actual "coefficient of scalability" (scalability). The level of significance for scalability is at least 60 %. In contrary the coefficient of reproducibility has to be at least 90 % (cf. Hatch/Farhady 1982, p. 179).

[8] This finding emerges even if the cut-off point is set to 50 %.

[9] A frequency distribution would better lend itself to further discussion. Because the focus in this paper is on the most frequent features, such a discussion is not undertaken here.

[10] Variable 12 concerns the general backing of the standard consonant /ʃ/ (e.g.: [ʃ̟, ɕ]), variable 14 stands for the realisation of the standard /g/-phoneme as a fricative (e.g.: [ʃ, ɕ]) in a palatal context.

[11] This would be something to discuss in another context. In the meantime, it does not seem very useful to speculate about the reasons for this particular case of reduction.

[12] For a broader discussion cf. Lameli 2004c.