

MARTIN EHALA, TENE ÜPRUS (Tallinn)

THE MECHANISM OF SUBSTRATE IMPACT ON SUPERSTRATE: ASSESSING URALIC SUBSTRATE IN GERMANIC*

Abstract. Kalevi Wiik has suggested that certain changes in Germanic were actuated by shifting Finno-Ugric speakers. One of the crucial problems of such explanations is how to estimate the impact of any possible contact in the past to the grammars of the languages involved in this contact. According to the principles of the theory of communication accommodation the substrate features are unlikely to be brought to L1 as there is little motivation for monolingual L1 speakers to accommodate to low prestige L2 speakers. The paper suggests that accommodation is possible in such contact situation if there is a common identity for L1 and shifting L2 group. To test this hypothesis, an inter-group communication situation was experimentally created and the rate of accommodation evaluated in the conversations between Estonian and Russian speakers. The result confirmed that there is a perceived phonetic accommodation of Estonians towards non-native pronunciation and the signs are the stronger the stronger is the interpersonal relationship between the speakers. The paper also discusses the implications of these results to the understanding of contact induced change.

Keywords: Estonian, Russian, Finno-Ugric substrate, contact induced change, speech accommodation.

1. Introduction

Research on language contact (Thomason, Kaufman 1988; Thomason 2001; Mufwene 2001; Schneider 2003) has shown that contrary to common beliefs, almost any structural feature can be borrowed from one language to the other, provided that there has been a contact situation between the languages concerned. Perhaps this has motivated historical linguists to propose contact explanations to changes that were previously believed to be independent developments.

The problem with these explanations is that there is no precise method to assess whether a substrate influence that is linguistically possible, could

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actually have initiated the corresponding change in the contact language (see Laakso 1999). It is well known that contacts of different intensity lead to different outcomes from purely lexical borrowing to extensive grammatical convergence. No less important are also the status factors between the languages in contact. Different power relations lead to different patterns of bilingualism and different extent of changes that the languages witness. And last but not least, also the speakers' "attitudes can be either barriers to change or promoters of change" (Thomason 2001 : 85).

In this paper we will assess the hypothesis about several contact induced changes in Proto-Germanic, proposed by Kalevi Wiik (1997a; 2002). According to S. G. Thomason, a solid contact explanation should be able to show the effect of the contact to the whole language, not just explain the particular features; and it should be able to show that the contact between languages was "intimate enough to make structural inference possible" (2001 : 93). This means that contact explanations to historical changes need not only be substantiated by arguments on the structural plausibility of the particular change, but also by a socio-historic reconstruction of the particular contact situation with the assessment of the totality of the impact it could have had.

Such a reconstruction should be based on evidence obtained from contemporary contact situations and its validity should be checked against available archaeological, genetic and cultural evidence known about this historical setting. Thus, to assess K. Wiik's hypothesis we will model the possible types of contact situations that might give causes to changes proposed. Then we compare the model with what is known about the socio-historic conditions at the time of the proposed substrate influence by K. Wiik to see whether his explanation is viable or not.

2. Hypothesis: Finno-Ugric substrate in Germanic

According to K. Wiik (1997a; 1997b; 2000a; 2000b; 2000c; 2002) the language boundary between the Indo-European and Finno-Ugric languages was initially located in the Central Europe and coincided with the boundary of agricultural and hunting subsistence systems. During the last 7500 years, this language boundary has moved to its present location in the East coast of the Baltic Sea. This happened, according to K. Wiik, as the Finno-Ugric speakers first adopted agriculture and later shifted to Indo-European languages. Thus, according to K. Wiik, we have a vast area of language shift that has left behind significant substratal influences in Germanic, Slavic and Baltic languages.

For example, K. Wiik proposes that the cause of the consonant shifts in Proto-Germanic described by Grimm's Law and Verner's Law was incomplete learning of Proto Germanic by shifting Finno-Ugric speakers (Wiik 1997a; 2002). Indo-European protolanguage is assumed to have had a complex plosive system with voice and aspiration oppositions. The Finno-Ugric protolanguage plosive system, on the contrary was very simple, consisting of only three voiceless stops: *p*, *t*, *k*. Thus, as K. Wiik (1997a) argues, the Finno-Ugric speakers substituted the voiced stops with the corresponding voiceless ones in a similar manner as the Finno-Ugric learners often do today while speaking English. This accounts for the

devoicing part of Grimm's Law (see 1a). As for the changes involving aspiration, K. Wiik (1997a) assumes that the aspirated plosives (traditionally symbolised as *ph, th, kh, bh, dh, gh*) were actually pronounced with friction in the place of articulation. Finno-Ugric speakers identified only the friction part and omitted the occlusion part. This learning error is common for Finno-Ugric speakers also today (for example German *Pferd* is heard as *Ferd* etc). Thus, the shifting Finno-Ugric speakers replaced the aspirated stops by homorganic fricatives, and later replaced the marked φ and β with the unmarked *f* and *v*:

(1) (a) devoicing

$b > p, d > t, g > k$

(b) omission of occlusion

$/ph/ p\varphi > \varphi > f$ $/th/ t\theta > \theta$ $/kh/ kx > x$

$/bh/ b\beta > \beta > v$ $/dh/ d\delta > \delta$ $/gh/ g\gamma > \gamma$

Kalevi Wiik (1997a; 2002) has proposed similar explanations to a number of other changes such as the Proto-Germanic stress shift, stress centralisation (which caused apocopy and syncope, shortening of long unstressed vowels and reduction of the inventory of possible unstressed vowels), palatalisation and a number of vowel changes.

The idea of Finno-Ugric and Germanic contact influences is not a new one. Already in 1953, Lauri Posti put forward a hypothesis that Proto-Germanic superstrate has caused a large number of consonant changes in Proto-Finnic (Posti 1953). Although his contact explanations are largely rejected (see Kallio 2000, 2002), a considerable number of Germanic loan words in Proto-Finnic, as well as some toponyms of Germanic origin in Finno-Ugric area (Koivulehto 1987) imply that a contact existed, indeed. Petri Kallio (2000 : 96) suggest that it could have been similar to the contact of French and English after the Norman Conquest, thus an influx of a small number of culturally advanced superstrate speakers to the territory of substrate. Lauri Posti's (1953 : 90) original proposal would rather suggest an adstrate relationship.

Kalevi Wiik's hypotheses (1997a; 2002) give language contacts much more central role: basically, the Proto-Germanic is the outcome of the large scale language shift from Finno-Ugric languages to Indo-European. His hypothesis was supported and elaborated in several works of other linguists (Künnap 1997; 1998; 2000; Pusztay 1998) and historians (Julku 1997; 2000). However, K. Wiik's proposals about Finno-Ugric substratum in Proto-Germanic have been also heavily criticised (Kallio, Koivulehto, Parpola 1997; 1998; Anttila 2000; Palviainen 2001; Kallio 2002). For example, P. Kallio (2002 : 168–169) argues that there is a lack of Finno-Ugric loanwords in Proto-Germanic that one would expect if it had a Finno-Ugric substratum. On the other hand, there are a number of other non-Finno-Ugric substrate words in Proto-Germanic. Thus, there has been some other substrate rather than Finno-Ugric. Yet K. Wiik (2002) does not see this as a problem: numerous lexical borrowings point to a superstrate influence whereas substrate influence manifests itself mostly in phonology and syntax. As the Finno-Ugric influence in Germanic is substratal, loanwords are not expected.

The actual substratum explanations proposed by K. Wiik are even more strongly criticized. For example, the changes in (1b) could not have been

caused by imperfect learning by Finno-Ugric speakers as they "would naturally have replaced aspirates by stops instead of fricatives" (Kallio 2002 : 174). K. Wiik's (2000b) experimental counterevidence that Finnish subjects recognised heavily aspirated *ph* as *f* in a perception tests he conducted was opposed by S. Palviainen (2001) who pointed that whereas *f* is a phoneme in contemporary Finnish and could therefore easily recognised, the Proto Finno-Ugric did not have this phoneme and *ph* could not have recognised as *f*, but *p* instead.

Although the accent shift is perhaps the most likely candidate for a Finno-Ugric substrate in Germanic (see Salmons 1992 : 168–174), K. Wiik dates this change far too early (Stone Age) for the majority of Germanists to accept it: generally it is believed not to take place until the Iron Age. Palatalisation as a substrate influence has also been criticised for faulty dating: it could not be correct as the Finno-Ugric *i* has become a neutral vowel long before *i*-umlaut took place in Germanic (Kallio 2002 : 177). However, dating is one of the most controversial questions in historical linguistics: there are no sure methods of dating historical changes (unless written texts are available) and most of datings are just consensual.

Perhaps most convincing of the counterarguments presented so far is the apparent lack of Finno-Ugric toponymes in Proto-Germanic speech area (Kallio 2002 : 169), at the same time as there is a rich Finno-Ugric toponymical layer in Northern Russia (Saarikivi 2000). As toponyms are the most likely traces of a disappeared substratum, one would expect to find them if there is other substratal influence present. K. Wiik (1998) acknowledges this, but his arguments for apparent Finno-Ugric toponyms in Central Europe remain dubious.

Thus, from the perspective of comparative-historical linguistics, K. Wiik's hypotheses are falsified. The problem is that the proponents of K. Wiik's approach argue that the comparative-historical method is outdated and far more reliable results can be obtained by combining the methods of linguistics, population genetics and archaeology. This paper takes the challenge and tries to assess K. Wiik's hypotheses in the light of the general processes of second language learning and intercultural communication that are in operation in the processes of language shift.

3. Modelling substrate influences

According to S. G. Thomason (2001 : 66), substrate influences are likely in these cases where imperfect learning plays an important part in the contact situation. If imperfect learning is present, the intonation, phonetic system and syntax (word order) will be most affected. For these innovations to be accepted by the native speakers, the so-called negotiation process of the new norm must take place. As an example of this 'negotiation' (quotation marks hers), S. G. Thomason (2001 : 143) provides the case of a group of Hungarians shifting to a dialect of Serbo-Croatian. Serbo-Croatian has a dynamic stress whereas Hungarian stress is fixed in the first syllable. Shifting Hungarians were able to understand that the stress was not in the first syllable, and although they did not learn the real pattern, they fixed the stress on the penultimate syllable. When the communities become linguistically integrated the whole dialect has acquired the fixed

penultimate stress. Even though the example is vivid, S. G. Thomason (2001) does not provide a sociolinguistic mechanism how the 'negation' processes might operate in the contact situations.

We propose that a possible way how this can happen is through speech accommodation, "where identity and inter-speaker relations are disputed or actively (co-)constructed" (Meyerhoff 1998 : 223). According to speech accommodation theory (see Giles, Taylor, Bourhis 1973; Niedzielski, Giles 1996; Giles, Powesland 1997) speakers accommodate their speech to the conversation partner. Empirical research has shown that the signs of speech accommodation in conversations with non-native speakers manifest themselves in reduced speech rate, more careful pronunciation, code-switching and ultimately conversion to the conversation partner's language (Giles, Taylor, Bourhis 1973). However, phonetic accommodation is not mentioned in this study. Is it occurring at all? If the phonetic accommodation towards a foreign accent would be occurring, it could be the mechanism how substrate influences of a phonetic and phonological nature can enter superstrate language. We decided to test this on the case of Estonian-Russian contact situation.

4. Phonetic accommodation in inter-ethnic communication

To measure whether there is accommodation towards Russian accent in native Estonians speech, we conducted a series of experiments where different Estonian-Russian mixed groups held conversations. The conversations were held in Estonian which means that Russian speakers showed accommodation by using their non-native language. The task was to find whether there are also signs of accommodation from the side of Estonian participants. There were two hypotheses: 1) in Estonian and Russian native speakers' conversations held in Estonian language, Estonian participants show phonetic accommodation towards the accent of Russian participants; 2) the more closely individuals know each other, the stronger are the signs of phonetic accommodation toward non-native accent in interethnic setting.

Thus, we assumed that the nature of the particular inter-group relationship is very important factor defining the linguistic outcome of the contact. Social psychological research has indicated that cognitive representations of common group identity can induce positive attitudes towards the outgroup members which in turn may trigger stronger accommodation. In designing the experiment we followed the experimental design (Nier, Gaertner, Dovidio, Banker, Ward, Rust 2001) where a mixed ethnic group has a task to find a consensus on a rescue problem.

Thus, according to our legend, there are ten people in danger of death as their ship started to leak on the North Sea. The group is in the role of the rescue team. The team has some background information about each person to be saved. Based on this information they have to find a consensus in which order the people should be rescued. This requires interaction and cooperative interdependency which have shown to increase common group identity (Gaertner, Dovidio, Rust, Nier, Banker, Ward, Mottola, Houlette 1999). The actual goal of the experiment (to gather information about accommodation amongst the Estonian subjects) was not revealed, the subjects were told that the experiment was to explore teamwork strategies.

There were eight mixed Estonian-Russian groups and two control groups consisting of only native Estonians in the series of experiments. All the Russian subjects had a good knowledge of Estonian. To test the second hypothesis the groups were composed so that the interpersonal relationships varied in each group. Before the groups set to the task, they were briefed and interviewed in a group setting. The aim of the interview was to obtain information about interpersonal relations amongst the subjects and to reduce possible uneasiness from recording equipment. The total time of recordings is nearly 4 hours consisting of 1 h 20 min of interviews and 2 h and 23 minutes of task solving.

All the recordings were listened carefully, and all instances of possible Russian accent in the speech of Estonians were separated from the rest of the data. Mostly these were single words or short phrases. Some tokens of speech without accent, as well as some tokens with a genuine Russian accent produced by the Russian native speakers were also separated from the data to serve as fillers in the perception test. Then the critical tokens as well as the fillers were arranged to a sequence so that the critical tokens appeared in the context of immediately following an unaccented token and also a genuinely accented one. Thus the critical tokens were presented twice in the test. The stimuli from different speakers were ordered randomly.

The subjects of the perception test were 27 students of Estonian philology from the Tallinn University, 2 males and 25 females. 24 of the subjects were native Estonians. The subjects were presented each stimulus twice in 1 second interval; the pause between the stimulus pairs was 4 seconds. There were 63 stimulus pairs in the test. The subjects were asked to assess for each pair whether the word or phrase had an accent or not.

The initial analysis detected signs of accommodation in four experimental groups out of eight, the perception test confirmed clear accentual accommodation in three groups; two instances from the fourth group were assessed as accentual by 11% and 48% of the subjects of the perception test (see Üprus 2005 for details). As the first hypothesis was confirmed, there is evidence for phonetic accommodation in the speech of native speakers towards the second language variety. Accordingly, speech accommodation is a likely mechanism by which the substrate phonetic influences get to the superstrate language. What is even more interesting from the point of view of the substrate influences is the way accommodation occurs in inter-group conversations. We'll provide three examples from the experiments.

One of the experimental groups (group 2 in Üprus 2005) consisted of two native Estonians, two Russians. The Estonians Kaia and Siim knew each other beforehand; all others were strangers to each other. The conversation was relaxed and smooth, jokes were made, all members of the group contributed to the discussion. Kaia (Estonian female) spoke to the Russian subjects (females) often; Siim (Estonian male) did not address the Russian subjects directly.

Contrary to our second hypothesis that strangers do not accommodate phonetically in an interethnic setting, there were some clear cases in Kaia's speech, for example in the word *lapsed* 'children'. There was a lot of discussion over the children and so the word *lapsed* was uttered many times by all the participants, including Kaia. Kaia's first token of *lapsed*¹

'children' was marked without an accent by all subjects of the perception test. *lapsed²* was marked as accented by 30 % of subjects. The fourth instance *lapsed⁴ meil on* was marked highly accentual as well as the fifth instance of *lapsed⁵* right thereafter.

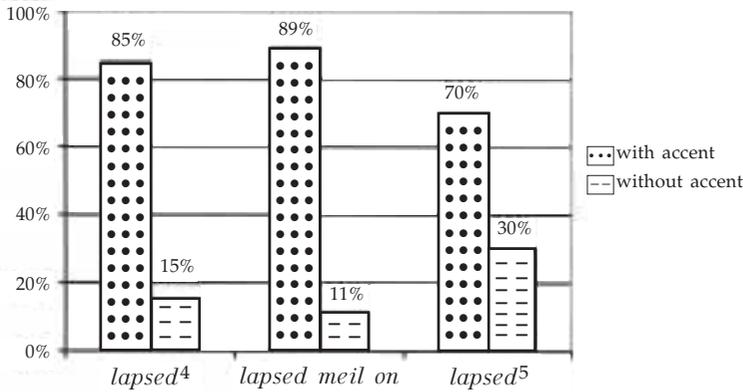


Figure 1. Perception of Kaia's *lapsed* 'children'.

Another group (Group 4) consisted of two best friends Maaja (Estonian female) and Anita (Russian female). They had been roommates at the hostel for 2 years and had become very good friends, their previous friends have become their common friends. When they solved the experimental rescue task, they used code switching very extensively. This group also showed a total accommodation where Maaja spoke Russian and Anita replied in Estonian:

Maaja: *ну давай Леонид*
'but take Leonid'

Anita: *mkmm Leonid hakkab neid julgustama seal*
'no, Leonid becomes to encourage them there'

Maaja: *а ну да что kõik on korras kõik on korras*
'but yes, well, all right all right'

In this passage, the phrase *kõik on korras kõik on korras* were rated as accentual by 67% of the subjects of the perception test. In Maaja's speech there were many instances of accented speech. For example names of Russian essence such as *Leonid*, *Viktor* and also *Gerli* were assessed accentual in Maaja's speech by 100% of perception test subjects. As phonetic accommodation was very extensive in Maaja's speech, not all instances could have been included in perception test. In Figure 2 there are just a few examples: *lemmikhobi* 'favourite hobby', *pereloomisele* 'establishing a family', *kõik on korras kõik on korras* 'everything's all right everything's all right'.

As examples above show, the second hypothesis that phonetic accommodation does not occur in conversations with strangers did not find confirmation. In group 2, Kaia was not familiar with the Russian participants, nevertheless she accommodated phonetically. Yet it seems that in the case of good and close friends, phonetic accommodation is stronger and occurs consistently throughout the conversation as was the case with

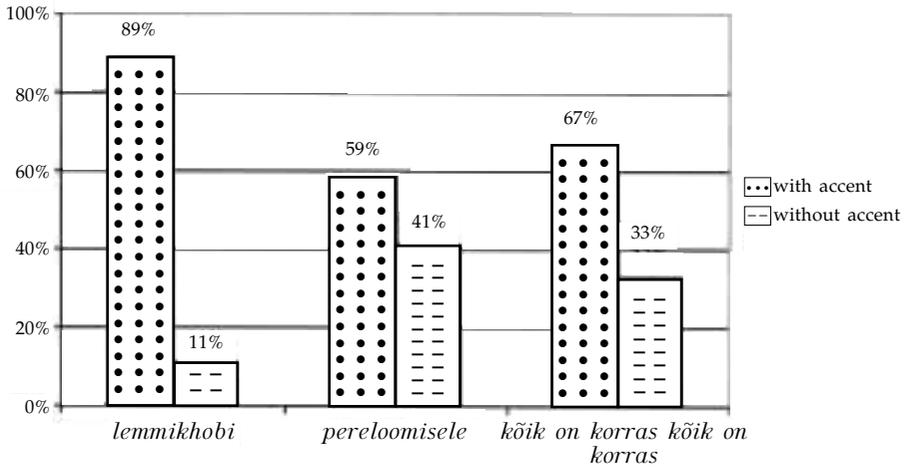


Figure 2. Perception of Maaja's phrases.

Maaja. This phenomenon could not be attributed to the time spent together, though. For example the members of group 8 Tom (Estonian) and Vladimir (Russian) who had been roommates at the hostel for 1.5 years showed no phonetic sign of accommodation when solving the experimental rescue test. Although they lived in the same room, they had not become friends, but just co-inhabited there. Thus, phonetic accommodation presupposes a positive attitude towards the interlocutor, it is not just a case of phonetic convergence due to surrounding linguistic context. This conclusion has interesting implications to contact induced change as it shows the importance of the nature of the inter-group relations to the linguistic outcome of the contact situation: the accommodation occurs only in case there is a wish to accommodate not when there is just language contact.

5. The sociolinguistic mechanism of substrate innovations

For substrate influences to enter the superstrate language one has to assume that the learning errors that substrate speakers produce (for example accent) find their way to the first language of the superstrate speakers. As the experiments described in this paper show, a possible way how this can happen is speech accommodation. However, speech accommodation is not a sufficient condition for a feature to enter the superstrate: the superstrate speakers who have been in contact with the substrate speakers should carry substrate features over to their speech when speaking to their in-group members and the latter should accept the innovation, too. In some cases it does happen, in some cases not. S. G. Thomason (2001) attributes this to speakers' different attitudes, and it certainly is so generally. As our experiments indicate, in the case of substrate influences, the determining factor might be better characterised by the nature of inter-group relations in any particular case.

For example, Bridget Anderson (1999) describes a contact situation in North Carolina where Snowbird Cherokee and Appalachian Anglos have been in close contact over 200 years. Cherokee have been bilingual for long time, but currently a language shift is in progress. However, Cherokee

have adopted the norms of English only partially, bringing clear features from their ancestral language into their variety of English — Cherokee English which clearly functions as the identity marker. Although the contacts have been long and close, there are no signs of the Cherokee English features penetrating into Appalachian English which in turn differs in several respects from the Standard English. One reason may be that there are only 5,8% of Cherokees in the county.

The only example of the contrary that we were able to find in the literature is the case of a northern dialect of Serbo-Croatian adopting a fixed stress from Hungarian speakers who shifted in large numbers to Serbo-Croatian reported by S. G. Thomason (2001 : 143). Thus, it seems that normally the substrate features do not spread from the speech of the shifting group to the speech of native speakers and it takes rather special conditions for this to happen — for a substrate innovation to spread, the innovating superstrate speaker has to diversify his/her speech from the in-group. This is the opposite of accommodation.

Allan Bell (1984; 2001) calls this "referee design" — style shifts that are introduced by the speakers to accommodate to a salient but absent group of audience — in opposition to "audience design" — for accounting the stylistic changes speakers undertake in response to their audience. Usually the audience design is used to show solidarity to the audience and referee design to stress one's identity (Bell 2001). The first increases linguistic similarities between the speaker and the audience, the second increases differences between the speaker and the audience. Thus, for substrate influences to enter the superstrate language there should be referee design involved, i.e. the influence of substrate speakers' outgroup should be so salient that it would affect the superstrate speaker's choice of style even when they are in conversation with their in-group members. In some sense this would make him/her marginal in the in-group. The question is why should he do this.

Leslie and James Milroy (1992) argue that for the innovation to spread there should be first, a large number of innovators and second, something desirable in outgroup, so that the members of the receptor community would like to identify themselves with the donor community. "Ultimately, for an innovation to be adopted, it seems that the adopters must believe that some benefit to themselves and/or to their groups will come about through the adoption of the innovation" (Milroy, Milroy 1992 : 182).

Thus, for a substrate feature to gain ground in the superstrate, a significant number of superstrate speakers need to find adopting some substrate features as beneficial, so that they start to use substrate speakers as a reference group in their style shift when speaking with other in-group members. Typically however, there is no need for superstrate speakers for such a change as the power factors favour their own identity. If such a thing still happens it would require quite specific social conditions what we will call the double prestige system: general and local.

At the general level, the superstrate dominates politically and culturally which is the main reason for the language shift to take place in first place. On the local level, the substrate group should dominate in order to make the local superstrate speakers to adopt their version of the superstrate. Thus, the whole process involves active cultural identity construc-

tion and negotiation, achieved mainly through speech accommodation in the social network (Gumperz 1982; Meyerhoff, Niedzielski 1994; Meyerhoff 1998; Milroy 2001; de Bot, Stoessel 2002; Hazen 2002).

Having outlined the processes underlying the emergence of substrate influences from the micro-sociolinguistic to the macro-sociolinguistic perspective, we now proceed to assessing the plausibility of Finno-Ugric substrate in Germanic as hypothesised by K. Wiik (1997a; 2002 etc).

6. Assessing the Finno-Ugric substrate in Germanic

Let us try to model the Germanic—Finno-Ugric contact situation. According to J. Puszta (2001 : 82), on pre-Uralic time, "people of different cultures and languages coexisted for many thousand years, forming evenly balanced relationships with each other [---] This balanced situation, due to some natural catastrophe, invasion of aliens, or the appearance of new instruments of production, etc., got disturbed, bringing one of the groups into a dominant position, whose language and culture became influential". This language started to serve as *lingua franca* and by this influenced the other languages in that region.

It is argued that the comb ceramic communities formed a large network that enabled trade in a vast area of between Scandinavia and Urals (Carpelan 1999 : 258). The expansion of boat-axe culture is a reflection of large migration bringing innovations to Eastern Europe and Baltics (Carpelan 1999 : 262). This is the situation of the contact. According to our model outlined in the previous section, for substrate innovations to enter the superstrate, there must exist a double prestige system — global (favouring the superstrate) and local (favouring the substrate).

It is known that the density of hunter gatherers is about 1 person per square kilometer whereas in farming it could be up to 10 persons per km² (see Renfrew 2000 : 12; Moreau 1998). Thus, we are talking of groups of very different size, economic power and population density. Such power and number differentials are very unfavourable for such a double prestige system to develop — even if superstrate speakers accommodated towards substrate variety, there is no apparent motivation to carry these features over to their speech to their in-groups — substrate variety is a variety of a weaker and inferior group. To associate oneself with this group gives no benefits to a superstrate speaker.

Colin Renfrew (2000) suggests that it might have been common for farming communities to take wives from neighbouring hunter-gatherer groups. In this case it would be likely that the superstrate variety of substrate mothers would spread to their immediate family, but for this influence to have lasting effects, one should assume a large number of mothers with the same substrate background. What is known about the structure of hunter gatherer communities of in this region (Carpelan 1999), this was not the case.

Further, the size differences would be the main obstacle also for forming such a single speech community where the substrate speakers would participate at least as equal partners. Thus, there is little possibility for the substrate to leave phonological or grammatical traces to the superstrate — the size differences between the groups are too large for

hunter gatherers to dominate which would allow the emblematic features of their speech to spread.

And as the current contact situations confirm, in cases when the superstrate community highly outnumbers the substrate community, hardly any noticeable substrate features are carried over to superstrate (for example American or Australian English as compared to Indian English). On the other hand, lexical substrate influence in the form of place names and names for specific species of flora and fauna would be possible and in fact these have been widely attested also in settings where superstrate outnumbers the substrate (Chicago and Mississippi, to name a few). If K. Wiik's hypothesis would be correct, it would mean that Germanic has adapted highly emblematic phonetic features from Finno-Ugric substrate, but not place names and other specific vocabulary which would be functional and thus expected in this contact situation. This contradicts the predictions of the model as well what is known about confirmed substrate influences in the world languages.

However, the problem may have another interpretation. It has been argued (Zvelebil 1996; Renfrew 2000) that farming spread to South-east and Central Europe by demic dispersal, i.e. by population migration, but to the North and West, it advanced by cultural dispersal — there is little gene flow from the centre to periphery which indicates a lack of migration. Colin Renfrew (2000) mentions that there is possibility that by the adoption of agriculture, the language of agriculturalists might have also been adopted; Kalevi Wiik (2002) presents this possibility already as a fact.

In principle it is quite common that language shift occurs in a small low status group that lives in the proximity of a high status group and the outcome variety has strong substratal features. The emergence of various ethnolects of this type widely attested in European migrant populations is a clear example of this process (Clyne 2003). Thus, Finno-Ugric substrate in Germanic could be possible if Germanic speakers were former Finno-Ugric speakers and Germanic is their version of Indo-European.

Colin Renfrew (2000) admits that the problem of the circumstances under which the hunter gatherers adopt both farming and the language of farmers has not fully explored. We tend to think that the language shift in the case of farming dispersal is just a subcase of language shift in general. Currently there are no fully satisfactory models for language shift and maintenance although several models have been proposed (see Clyne 2003 for a thorough overview). The number of factors affecting the situation is large ranging from geographic to demographic, economic and ideological (Harris Russell 2001). Cultural identity may also have profound effects on the outcome (see Childs, Mallinson 2004; Hazen 2002). No doubt the situation in the past was as complex as today. To explore it goes beyond the goal of this article. Yet the emergence of substrate influenced ethnolects at the border of the core farming area is likely. The question is, whether the one that probably formed at the area of Germanic *Urheimat* was based on Finno-Ugric or not.

To answer this, one should take into account the genesis of ethnolects. Most often shifting one's language is pitiful necessity which is compensated somehow. Thus, an ethnolect only partly arises from the inability to acquire the target language adequately, ethnolect is also an important bearer

of identity. Speaking an ethnolect is a way how the shifting group maintains its integrity. If a language is lost, not everything is thrown away. And one that is rarely given up is toponyms. There is no need for a group that remains on its original homeland, but shifts their language to reinvent all the convenient place names. This just does not happen — the language is not shifted suddenly with complete loss of memory, but it takes at least three generations with a period of bilingualism. If the old phonetic features are retained, place names would have been retained certainly.

For example, the Fiji has a less than 0.5% of European population and around 2% of English native speakers. The foundation phase of Fidji English started in early 19th century and now it is on the exonormative stabilisation stage.¹ The Fidji English has a large proportion of local toponyms, flora and fauna names and cultural terms (Schneider 2003 : 258). Hong Kong has also very small native English population. Hong Kong English is on the stabilisation stage now and has a established set of cultural terms as well as plant and animal names from the substrate (Schneider 2003 : 259). Singaporean English which is on the endonormative stabilisation stage (stage 4) has a strong component of Singaporeanism such as plant and animal names, cultural terms as well as words of different walks of everyday life (Schneider 2003 : 265). Examples of this type could be easily added.

Thus the lack of place names is the weakest point in K. Wiik's (1997a; 2002) argumentation for Finno-Ugric shift to Indo-European. If the shift would have happened at the proximity of Indo-European without an immigration of Indo-Europeans, the original Finno-Ugric place names would have to have been retained to a large extent, as have been the case in well documented occurrences of language shift. But this is not the case. Furthermore, as K. Wiik (2002) argues, the ancient Finno-Ugric communities had elaborate seal hunting and fishing technologies. This is certainly a part of the culture that had no equivalent in spreading agricultural Indo-European language. Provided that these technologies did not go obsolete, which they did not, there is no reason to claim that all old Finno-Ugric terminology connected to these technologies was replaced by new Germanic terminology.

7. Conclusion

The paper explored the mechanisms of phonetic (phonemic) substrate influences in the superstrate. We suggested that substrate influences could be carried over to the speech of superstrate speakers by speech accommodation. Our experimental results proved that superstrate (adstrate) speakers do indeed accommodate phonetically. Yet for a substrate feature to be accepted by superstrate in-group, either strong solidarity needs to be held between two groups or the substrate group should be larger than the superstrate. In any case the process of language shift goes through a

¹ E. W. Schneider, generalising from his large scale study of new Englishes (like Indian English, Singaporean English etc) has proposed that the process of dialect birth through substrate influences has five distinctive stages: foundation, exonormative stabilisation, nativisation, endonormative stabilisation and differentiation (2003 : 255).

number of distinct stages all of which have its linguistic and social impacts (Schneider 2003).

Thus, according to our analysis, the only cases where phonetic substrate influence is possible are those where the substrate speakers form the vast majority on their territory. In such cases it is certain that the old place names will continue to be used and thus, substratal toponyms should be found in the superstrate, as well as lexical borrowings from local nature, culture and technology.

Assessing the hypotheses of large Finno-Ugric substratum in Germanic, proposed by K. Wiik (1997a; 2002), on the framework of language shift, we were able to draw the following conclusions:

1) Finno-Ugric substrate in Germanic would be highly unlikely in the case of demic diffusion of Indo-European agriculturalists to the territory of Finno-Ugric hunter gatherers, as the social settings would not favour the emergence of a single speech community. However, in this case there would be expected toponymic and cultural borrowings to the superstrate, i.e. Germanic.

2) Finno-Ugric substrate in Germanic would be unlikely also in the case of language shift without a significant amount of superstrate population migration, as in this case a large number of toponyms, technological and cultural terms as well as names of local natural species would have been retained.

As the language shift under both conditions (with demic migration or without it) would have left some local lexical material in the superstrate language, and as this is absent, the overall conclusion is that the substrate explanations to developments in Germanic proposed by K. Wiik (1997a; 2002) are not feasible.

Addresses:

Martin Ehala
Tallinn University
E-mail: ehalam@gmail.com

Tene Üprus
Tallinn University
E-mail: yprust@hotmail.ee

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**МЕХАНИЗМ ПЕРЕНОСА СУБСТРАТНОГО ВЛИЯНИЯ
НА СУПЕРСТРАТНЫЙ ЯЗЫК:
О ВЕРОЯТНОСТИ УРАЛЬСКОГО СУБСТРАТА В ГЕРМАНСКИХ ЯЗЫКАХ**

Для объяснения звукоизменений в протогерманском языке Калеви Вийк выдвинул гипотезу, согласно которой они произошли под субстратным влиянием носителей финно-угорских языков. Языковые контакты вполне могут быть причиной языковых изменений, однако слабое место подобных толкований состоит в том, что очень трудно оценить меру этих контактов в прошлом, а потому и возможное влияние их на грамматику контактировавших языков. Согласно теории языкового приспособления, перенос особенностей субстратного языка в суперстратный маловероятен, поскольку у моноязычных носителей суперстратного языка отсутствует психологическая мотивация для приспособления своего речеупотребления к языковому варианту носителей субстратного языка. В статье предлагается гипотеза, что влияние носителей субстрата на суперстрат возможно в ситуации, когда у носителей субстрата и носителей суперстрата формируется общий идентитет. Чтобы проверить эту гипотезу, проведен ряд экспериментов, в ходе которых наблюдалось взаимное языковое приспособление на фонетическом уровне эстонцев и говорящих на эстонском как вторым языке носителей русского языка как родного. В результате экспериментов выяснилось, что носители родного языка приспособливают фонетически свое речеупотребление к такому у носителей другого языка и это приспособление тем сильнее, чем теснее межличностная связь между говорящими. В статье результаты экспериментов интерпретируются в свете теории контактных изменений.