

## ASYMMETRIC VOWEL HARMONY IN GREENLANDIC FRINGE DIALECTS

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Abstract: This paper deals with a phenomenon characteristic of certain regional varieties of Greenlandic Eskimo, viz. the so-called "i-dialect" in which /i/ has replaced /u/ in a great many instances. It is shown that this vowel shift is due to distant assimilation, and the resultant pattern is referred to as a case of "asymmetric" vowel harmony. Various descriptive models accounting for this pattern, and their possible implications for hypotheses about internalized grammar, are discussed.

# 1. Introductory remarks on vowel harmony

To a very first approximation, vowel harmony (henceforth: VH) may be defined as some kind of principled agreement, with regard to phonetic quality, among the vowels of consecutive syllables. In languages with VH it may be so that consecutive syllables agree more or less (under conditions to be specified) with regard to the labial articulation and/or frontness-backness and/or degree of openness of their vowels (under this provisional definition "umlaut" is included in the category of VH, of course).

There are other, more or less related regularities which refer to consecutive syllables but affect features other than the above-mentioned ones; unlike VH these other regularities often imply that consecutive syllables should be dissimilar rather than similar. Examples are: sequential alternation of long and short vowels or syllables; sequential alternation of stressed and unstressed syllables. (There may even be a specific conditioning among different features in consecutive syllables, cf. the phenomenon referred to in Nordic philology as "vowel balance", i.e.,



an interrelation between the quantity of a stressed syllable and the vowel quality of a following, unstressed syllable.)

VH has received considerable attention in the phonological literature, because the descriptive problems posed by this phenomenon are crucial for virtually all major aspects of phonological theory. There are numerous important contributions both representing structural linguistic schools and the transformational-generative trend. The emphasis on the different aspects varies, of course.

It should be realized from the beginning that VH may be approached from different angles. It is a commonplace that one should not confuse diachronic and synchronic statements (although the terminology, in the case of "assimilatory" phenomena, may invite such a confusion), but even from a strictly synchronic angle there are different kinds of statements to be made about VH in a language.

On the one hand, one may perhaps observe that there are some formatives (morphemes) whose phonetic shapes alternate in terms of VH, i.e., depending upon the vowels of adjacent formatives. Turkish is generally quoted as a case in point (cf. the alternating shapes of the plural formative in adam-lar 'men', türk-ler 'Turks'). It is then an immediate task to search for, and state, a generalization about these alternations, and more specifically, to make statements according to which the choice of alternants in all possible types of environments can be predicted. I shall refer to a generalization of this kind as a GENERATIVE statement. (Note that the term, as used here, does not refer specifically to the transformational trend in linguistics: statements about automatic alternation in the morphophonemic component of a structural linguistic grammar may be equally "generative".) The essential property of such a regularity, if stated in rule form, is that it is assimilatory, e.g. of the type: "a suffix vowel assumes the same frontness-backness specification as the vowel of the immediately preceding syllable". In addition to this



specification of the assimilatory mechanism the rule must, of course, be supplied with a definition of its domain (i.e., the kind of stretch within which the rule exerts its power, be it a noncompound wordform, a wordform regardless of its complexity, or possibly even more complex stretches). And finally, it should be well-defined how the rule applies to a form, e.g., whether it applies iteratively so that a suffix vowel undergoing VH can, in turn, condition the quality of a following suffix vowel. Needless to say, there is a certain trading relationship between the formulation of the rule itself and the formulation of its conditions for application (if the rule referred to above is found to apply iteratively, one must consider an alternative, viz. the possibility of modifying the rule so that it assimilates all non-initial vowels "simultaneously" to the initial vowel).

On the other hand, one may observe that wordforms in a given language obey a phonetic constraint of VH type, e.g., a constraint which may be formulated like this: "within a wordform all vowels must agree with respect to frontness-backness". Note that this is not necessarily a statement supported by observed cases of vowel alternation; the statement simply implies that there are no wordforms in the language which are at variance with the VH constraint: there may be forms such as ili, olu, but \*ilu, \*oli are not well-formed since they violate the constraint. I shall refer to a generalization providing this kind of information as a STRUCTURAL GENERALIZATION. (Note again that the terminology is not intended to refer to particular "schools"; no sensible approach to linguistic description can do without structural generalizations of some kind, and indeed, well-formedness conditions are fully recognized in recent transformational-generative work, although there has been some uncertainty as to how such statements should be fitted into the total phonological description.)



It is important to note that generative VH rules, and structural generalizations about VH, may or may not coexist with the same domain of applicability in a given language. Like other assimilatory phenomena, vowel alternation conditioned by VH may well occur in connection with the affixation of one formative to another, even if there are formatives whose internal structure violates a strict VH constraint. This situation may be found in VH languages with a stratum of loanwords. Obviously, it may be so that the internal structure of some loanwords violates an otherwise existing VH constraint (Turkish may be quoted again, cf. otobüs 'bus' without internal VH, but plural otobüsler with VH between base and suffix). However, it is also possible for loanwords to be accommodated in terms of a mechanism of VH which is not otherwise found in the language. I shall illustrate this from West Greenlandic.

As mentioned briefly in Rischel 1974 (p. 459), Dano-Norwegian loanwords which are of some age in West Greenlandic have been modified so that they are (more or less) congruent with the well-formedness conditions of the "genuine" vocabulary. In this process of accommodation, VH comes in under three different kinds of conditions. Firstly, since the language has only three vowel phonemes, /a, i, u/, each vowel shade in a foreign word must be allocated to one of these (and replaced by an appropriate allophone), but this leaves the neutral, unstressed vowel (schwa) unaccounted for. With some exceptions the indeterminacy has been solved by choosing a vowel exhibiting VH with a neighbouring syllable, example: Jørgen → /juulut/ or /juurut/ (ø is replaced by its nearest equivalent, viz. the long rounded back vowel /uu/, and the value of the final vowel is chosen accordingly). Secondly, initial consonants in foreign words which do not occur in Greenlandic words, are often made non-initial by adding a vowel in accordance with a VH rule, example: Jørgen → /ujuulut/ (old



variant form from southernmost West Greenlandic). And thirdly, if impermissible consonant clusters are eliminated by the insertion of vowels, the quality of each epenthetic vowel is determined by VH. Examples are legion, e.g. blæk (blekk) → /pilikki/ 'ink' (the final /i/ is not interesting in this context; it will appear from the following examples that loanwords ending in a consonant are often augmented with a final /i/); trumf → /turuffi/ 'trump'; Knud (Knut) → /kunuut/, æble → /iipili/ 'apple'. - There is also a component of VH in the treatment of loanwords such as rør → /ruujuri/ 'tube', wire → /vaajari/.

It is probably clear from these few examples that VH plays a prominent role in the accommodation of loanwords in Greenlandic Eskimo. At the same time, there is no well-formedness constraint according to which consecutive vowels must exhibit VH: existing full vowels in loanwords are replaced by the nearest equivalent regardless of VH; hence kartoffel → /katurfili/ 'potato'; Efraim → /iikaliimi/ (southernmost West Greenlandic<sup>1</sup>), where there is no vowel insertion since the desired accommodation is obtained by metathesis. This does not mean that it is satisfactory to characterize the application of VH as "sporadic". Rather, it must be stated that VH in this context is a mechanism providing underspecified vowels with a full specification, or, in a different format of description, a mechanism that determines a unique representation for a variable. It is not a mechanism that changes one possible type of vowel into another possible type of vowel. Vowels that already have a fully determinate - and possible - representation, remain unaffected. But the mechanism of VH is no less regular for that reason.

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1) This dialect has /k/ or /q/ (depending on the environments) as the counterpart to general West Greenlandic /f/.



Somebody might claim that this kind of regularity is of peripheral importance for the phonology of a language: it is not part of the functional phonology per se but only an accomodation device that comes into force in the process of borrowing. In support of this claim one might mention that vowel epenthesis without VH seems to exist as a rule of the language, cf. the variant shapes of the relative case ending in /nuna+p/ versus /aqq+up/ and of the plural ending in /nuna+t/ versus /aqq+it/ (/nuna/ 'country'; /aɣiq/ ~ /aqq/ 'name'). If one chooses to speak of epenthesis here (see extensive data and discussion in Rischel 1974, Part II, § 2), the quality of the epenthetic vowel is determined by the following consonant, not by any vowel in an adjacent syllable. These two sets of findings need not be in descriptive conflict, however; one may claim that the VH mechanism taking care of loanwords is a kind of "morpheme structure rule": it has the single formative as its domain, and hence the suffix vowels of /Vp/, /Vt/ cannot be affected by it. However, it is different if the vowel-zero alternation in the base of /aɣiq/ ~ /aqq/ (previously /ateq/ ~ /atq/) is accounted for in terms of epenthesis. In complex forms this base (and other bases of analogous structure) occurs with or without its second vowel, depending on the structure of the suffixes or suffix clusters; when occurring alone it is obligatorily bisyllabic in accordance with a well-formedness constraint prohibiting word final consonant clusters. If this second vowel is epenthetic, the existence of a VH rule would require that it came out as /a/, i.e. \*/ataq/ rather than /aɣiq/ (/t/ and /ɕ/ regularly alternate according to the quality of the following vowel). However, the vocalic reflex of this alternating set is invariably /i/ (similarly /tupiq/ 'tent', relative case /tuqqup/, plural /tuqqit/, does not occur in the shape \*/tupuq/).

Under these circumstances I should certainly not like to dismiss the loanword data as being of peripheral importance.



On the contrary, these forms, if anything, provide us with hard facts about mechanisms employed at the time of borrowing. It is, on the other hand, a matter of descriptive principles, and of more or less intimate knowledge of the pertinent data, whether one chooses to describe the vowel-zero alternation in /aɛiq/ ~ /aqq/ in terms of epenthesis, syncope, or straightforward alternation between two representatives of a category defined underlyingly by alternation. I have found, on quite independent grounds, that the synchronic data are not in favour of an epenthesis solution for /aɛiq/ ~ /aqq/, /tupiɛq/ ~ /tuqq/ (see Rischel 1974, *ibid.*), but I am at variance on this point with some phonologists writing about West Greenlandic. Anyway, I think the attested existence of a VH "blank-filling" rule for loanwords should cast grave doubts upon the validity of an epenthesis solution for the other bi- or polysyllabic bases.

I have stated that generative rules of VH may, or may not, be matched by well-formedness constraints, and vice versa. In fact, situations in which there is some kind of "mismatch", are more interesting than situations in which there is perfect coincidence: the former provide more information as to the internal structure of the languages in question.

There is a different angle to the question of how much information one can deduce from a set of generalizations about VH: "asymmetric" systems (see p. 9) give more information about the phonological make-up of the language than do "symmetric" systems.

If one faces a suffixational language in which every non-initial vowel exhibits strict VH with the preceding vowel (with regard to the features involved in the mechanism of VH for this particular language), there may be no more to be done about this than just stating the pattern of vowel alternation, e.g. "front vowel after front vowel, back vowel after back vowel", or "rounded vowel after rounded vowel, unrounded vowel after unrounded vowel", or whatever simple or complex statement may be



true for this particular language. There are, of course, different formats of description that may be employed. One may say that (a) only word initial vowels are specified underlyingly for the features involved in VH, whereas all non-initial vowels are underlyingly incompletely specified ("archi-vowels" or "Pro-vowels") and only receive their full specification by a VH rule, or one may say that (b) each non-initial vowel is a variable ranging over a variety of vowel qualities, the choice of one specific alternant (i.e., the exclusion of other alternants) in a particular type of environment being predictable from a well-formedness constraint (strict VH). Given the VH data alone, it does not seem permissible to build more pattern into the description. Several phonologists prefer to elevate one of the alternants to the status of unique underlying representation and thereby introduce a directionality in the rule schema (e.g., one may postulate that suffix vowels are underlyingly all back but become front after front vowels). From the point of view of immanent description (description of patterning that is in the language) this solution distorts the picture, however (a solution working with underlying front vowels and a rule according to which vowels are retracted after back vowels, might serve the purpose equally well, and hence the directionality is spurious).

There may be external criteria for making such a choice, e.g., the analyst may believe in some theory about universal markedness according to which one or the other alternant is more natural and "hence" the more basic one, but this is something different from statements about regularities inherent in the language under study. No matter how one approaches linguistics, it seems to me legitimate to require that the two kinds of criteria be kept distinct from one another.

Now, what is an asymmetric system, and why does it provide more phonological information compared to a symmetric system?



The phonological literature contains reports about languages in which most vowels participate in a system of VH although some vowels (possibly just one) behave differently. It may be that these latter vowels are totally excepted from undergoing VH, or totally excepted from conditioning VH in adjacent syllables, or it may be that they participate (one way or another) in VH when occurring in some formatives but not when occurring in other formatives. Such a situation is interesting, both for the theory of VH rules and for the theory of underlying representations. There are well-known instances of umlaut that are just like this. For example, u-umlaut before a surfacing u (modern [Y]) in Icelandic has regular exceptions, cf. the stem dag- 'day' in nominative singular dagur versus dative plural dögum. It is a well-known argument that the reason why some occurrences of u fail to produce umlaut, is that these are epenthetic (dagur from dag-r as against sögur, plural of saga 'story', whose u is not epenthetic). The connection between epenthesis and failure to produce umlaut can, in turn, be accounted for in terms of rule ordering: umlaut precedes epenthesis, or at least umlaut precedes the mechanism by which the epenthesis vowel gets a specification identical with that of umlauting u (this may be read as a diachronic interpretation or, if one believes in synchronically ordered rules, as a synchronic description).

By asymmetry I refer to a particularly conspicuous type of skewness, viz. the situation in which it is true that  $X \rightarrow Y$  next to a syllable whose vowel shares the differential features with Y, but not that  $Y \rightarrow X$  next to a syllable whose vowel shares the differential features with X. Icelandic u-umlaut may again serve as an illustration: a goes to ö before u, but it is probably generally assumed that it is inadequate to posit a rule with the opposite polarity, i.e. switching ö to a before non-u. If this contention is beyond discussion, it is tantamount to stating that there is an interesting determinacy in the under-



lying representation: instances of alternation between a and ö should all be derived from underlying a (not from underlying ö or from something in between). It is definitely of interest to distinguish such an (alleged) asymmetric mechanism from the kind of symmetry observable in Turkish VH, rather than concealing the difference by introducing a spurious directionality in the description of the latter. A careful distinction between the two kinds of pattern is useful also in a diachronic perspective: it may be that a pattern which is now perfectly symmetric originated as an asymmetric one (e.g., that suffix vowels whose underlying status is now indeterminate, used to behave asymmetrically so that one might speak of a unique underlying representation at an earlier stage). It should be possible, within the format of description chosen, to state the transition from one situation to the other.

To be honest, I do not consider it all that evident that the a-ö alternation in Icelandic is synchronically a matter of a unidirectional rule. Under that analysis, forms in which the alternant ö occurs in a word final syllable, must be accounted for by positing underlying w or u which vanishes (is deleted by some rule) after producing umlaut, but how can it be proved that this is always the appropriate solution? What prevents us from positing underlying ö in some instances and making the rule work both ways, so that ö is switched to a before a vowel that is not u? e.g. in röð 'row', genitive raðar? The argument runs, of course, that there are (always?) related wordforms whose vocalism is best accounted for in terms of underlying a, but what is meant by "related" in this context? Forms that are related historically may not have the same underlying vowel from the point of view of synchronic analysis, and what about paradigms such as gata 'street' - (oblique case) götu, for which related forms provide no cue (as far as I can see)? The very question whether a goes to ö, or ö goes to a here, may be an artefact of the descriptive approach.



(as for possible appeals to "psychological reality", I see no reason whatsoever to assume that either of the two proposals is true in that sense - maybe speakers simply master the paradigm as an alternation set; if so, an analysis claiming to reflect something psychologically real can, at most, define the vocalic entity in question as a category of alternants, not as underlying a or ö).

It is no real complication of the description to make the umlaut rule work both ways; on the contrary, it becomes a more generalized type of assimilatory mechanism. The important thing is to find unmistakable evidence for or against a symmetric conception of the pattern. - Again, it is interesting to trace the diachronic development, which obviously supports the asymmetric solution (underlying a), but the process by which u-umlaut came into existence should not be apriorically assumed to continue its existence as such. The synchronic data may not be unanimously in favour of such a description.

I think it is typologically worth while to search for VH patterns which provide unmistakable descriptive evidence (not necessarily psychological evidence)<sup>1</sup> for an asymmetric solution. The vowel harmony pattern of Greenlandic fringe dialects which is called "i-dialect" (see section 2.2), is a typical case, and that is one reason why I shall give a brief description of it below. Another reason is that the nature of this pattern, and in fact the very existence of a strict pattern, has not been stated in the literature on Greenlandic, the phenomenon being generally taken to be a matter of unconditional sound substitution (with inexplicable exceptions). There is thus a straightforward task of linguistic documentation to be taken care of.

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1) The term "descriptive" as used in this paper simply means "stating generalizations emerging from a study of the data". I must emphasize that it is not intended to mean "allegedly internalized".



## 2. The concept of "i-dialect"

### 2.1 Dialects of Greenland

Before entering into a discussion of "i-dialect" it may be expedient to give a brief survey of the major dialect divisions in Greenland.

The most obvious grouping of dialects is indicated by Roman figures in Fig. 1 (for details on dialect differences, see Petersen 1970). There are seven major groups of dialects, some of which are more homogeneous than others. "I" is Polar Eskimo, which is totally outside the scope of this paper. "II" is the Upernavik dialect, which exhibits the peculiarity referred to as "i-dialect". "III" is the group of dialects (differing but little from one another) spoken in the Uummannaq district and all along the Disko Bay. "IV" is the group of dialects spoken from Sisimiut (Holsteinsborg) in the North through Maniitsoq (Sukkertoppen) and Nuuk (Godthåb) and with several isoglosses North and South of Paamiut (Frederikshåb) providing a fuzzy boundary toward the next dialect group. "Standard" West Greenlandic is based on the dialects of group IV, which I shall refer to as Central West Greenlandic (CWG). "V" is southern West Greenlandic, as spoken in different varieties from Paamiut (Frederikshåb) and southwards to Nanortalik (as mentioned above, Paamiut belongs to the former group in some respects). "VI" is the Kap Farvel (Cape Farewell) dialect, as spoken at the southernmost settlements (my material is from Narsaq kujalleq = Frederiksdal). Finally, "VII" is East Greenlandic spoken at and around the towns Ammassalik and Scoresbysund. Dialects II, V, VI, VII all share the peculiarity referred to as "i-dialect". Thus, "i-dialect" is encountered in the northernmost (Upernavik) and southernmost parts of West Greenland as well as East Greenland, i.e., viewed from the geographical center in West Greenland, "i-dialect" is a characteristic of the fringe dialects (with the exception of Polar Eskimo, which entirely breaks off the dialect geographical continuity of the rest of Greenland).



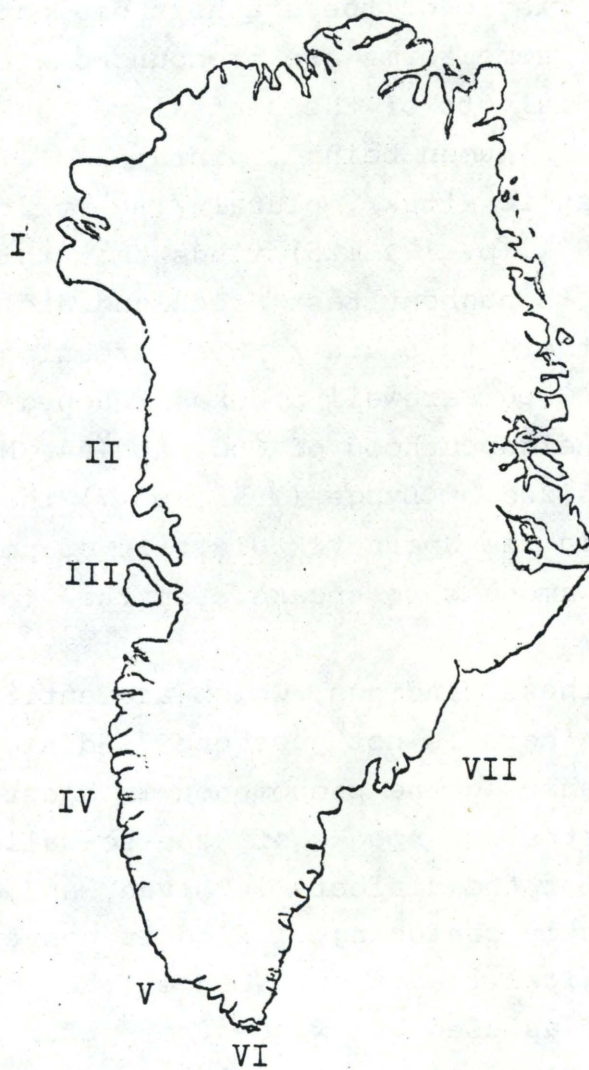


Fig. 1



## 2.2 What is currently meant by "i-dialect"?

In Schultz-Lorentzen's Greenlandic dictionary (1927) the entry "ersangavog" is translated by "speaks dialect; speaks with the Southland accent; speaks the I-dialect".

This word, which is derived from ersappog 'shows his teeth', refers to a characteristic of the southern dialects of West Greenland, viz. that some forms are pronounced with /i/ as against /u/ in the dialects of the central region of West Greenland, example: /inik/ 'human being', plural /ini<sup>v</sup>it/ as against Central West Greenlandic /inuk/, plural /inu<sup>w</sup>it/.

Thalbitzer (1921, p. 124-125) finds that this use of i instead of u occurs throughout East Greenland and assumes that it has spread from there to southern West Greenland: "This tendency has gone round Cape Farewell and has reached all the way up to the southern neighbourhood of Godthåb (64° N. lat.)". - Later, it was emphasized by Lynge (1955, p. 7) that i instead of u is also dominant in the Upernavik district of northern West Greenland (and also among some speakers in the vicinity of the capital Godthåb).

According to these findings, which are entirely supported by linguistic data, there is not just one "i-dialect", but a number of dialects sharing the phenomenon in question. Petersen (1970, p. 331) nevertheless speaks of "the so-called "i-dialect"" in referring to all of the dialects involved, and although this terminology is slightly confusing, I find it convenient to continue the terminological tradition. Hence, the term "i-dialect" (in quotation marks) as used below does not refer to a dialect but rather to a phonological characteristic common to a number of dialects.

The comparative and diachronic aspects are immediately interesting. As for the question whether /u/ has changed into /i/ (in "i-dialect"), or /i/ has changed into /u/ (outside "i-dialect"), comparative evidence is entirely in favour of the



former assumption, since Eskimo dialects outside Greenland (as well as Polar Eskimo) have /u/ not /i/ in these instances. Moreover, "i-dialect" entails a phonological merger of /u/ and /i/ (to the extent that /i/ is used instead of /u/), cf. "i-dialect" /inik/ 'human being', /sinik/ 'sleep' versus non-"i-dialect" /inuk/, /sinik/. Thalbitzer (1921, p. 124-125) also takes this position without any hesitation: "i ... has superseded u in a great many words and suffixes ... The change is limited to certain words while others have retained their u unmolested ...". Nonetheless, Lynge (1955, p. 7) contends that "the genuine Greenlandic i, which had been replaced by u in the further development of the language at other settlements, is still dominant up here [i.e. in the Upernavik district]" (translation mine). Although this view of the matter seems untenable in a comparative framework, there is some truth in it as far as the recent development is concerned, since non-"i-dialect" is now gaining ground, i.e., /u/ is being increasingly used in areas which are traditionally "i-dialect" areas (this process, which is promoted by the use of non-"i-dialect" in broadcasting and at school, is quite a slow one, however).

It is not the purpose of this paper to discuss the possible reasons why the phenomenon of "i-dialect" is shared by areas that are widely separated geographically, viz. Upernavik (II), East Greenland (VII), and southern West Greenland (VI, V, sporadically even IV). At all events, the dialect-geographical evidence strongly suggests that the origin of "i-dialect" must be of considerable age, but it cannot be decided easily whether inhabitants of different parts of Greenland successively took over the feature of "i-dialect" from their neighbours, or whether settlers at different places brought this linguistic feature with them in the first place (the former proposal is Thalbitzer's, as far as I understand him; the latter seems to be in agreement with Lynge). The present lack of a geographical continuity between the "i-



dialect" areas may seem to suggest that these are relic areas, or offsprings from a common source which one might call "Proto-Fringe-Greenlandic". However, there used to be Eskimo settlements both in northern East Greenland and (more recently) in the southernmost part of East Greenland, so there may have been more linguistic continuity all the way round from Upernavik via East Greenland to southern West Greenland at an earlier time. A priori, this makes the "Wellentheorie" equally plausible. I shall leave the question at that here.

Now, to return to a characterization of the phenomenon of "i-dialect", it may not be exactly correct to say that /u/ just changes into /i/. An /i/ that stems from /u/ is sometimes accompanied by labialization of a following consonant, and if it is followed by /i/ or /a/, the vowel sequence is invariably reflected as /i/ plus a labial glide plus the second vowel (/ini<sup>v</sup>it/ for /inu<sup>w</sup>it/, etc.). The long (homosyllabic) vowel /uu/ changes into /ii/ (i.e. not /i<sup>v</sup>i/, or the like) with or without a following labial component as in the case of single /i/ from /u/. I have suggested (Rischel 1974, p. 113-114) that /u/ did not change directly into /i/ but rather into a diphthong /i<sub>u</sub>/ whose second member is sometimes reflected as a labial component, and sometimes lost. This is entirely hypothetical; the hard fact is that the labialization or labial glide sometimes betrays the origin of /i/ as a reflex of /u/ (another such criterion is the different pronunciation of /t/ before original and secondary /i/ in the Upernavik dialect, see Petersen 1970, p. 332).

The "embarrassing" thing about "i-dialect" is that the sound shift in question has seemed so entirely unsystematic in character. Petersen (1970, p. 331-332), who just speaks of a tendency and who does not seem to assume that the sound shift is contextually conditioned, adds: "The 'i-dialect's' tendency to change /u/ to /i/ is far from consistent or sustained. There are still a great many words which preserve the /u/. A comprehensive ex-



planation of these omissions is lacking. One can ... point out a few causes which work independent of one another. The first is the danger of syncretism with frequently occurring words in analogous contexts. The second is apparent consideration for practical articulation in that /u/ is often preserved as a back vowel with back consonants /k/ and /q/."

### 3. My own investigation

#### 3.1 Material

During a stay in southern West Greenland in the winter of 1974-75 I worked intensely on "i-dialect", my first purpose being to gather as much material as possible for later comparison with material to be gathered in the Upernavik district. Since the chances of defining conditions for the sound shift seemed poor, I had chosen to attack the problem from the point of view of "lexical diffusion". It seemed to me that if it were known whether or not the sound shift occurs in largely the same lexical items in different dialects, this might provide a clue as to the connection between these various representatives of "i-dialect".

Most of the time I worked at the Kap Farvel dialect (VI) in the village of Narsaq kujalleq (Frederiksdal); this was later supplemented by material from the Alluitsoq (Lichtenau) fjord, which is within the general southern dialect area (V). My recordings (mostly tapes; to a lesser extent direct phonetic transcriptions) consist partly of free narrative prose, and partly (mostly) of responses to questionnaires which I worked out during my stay. The present paper is based exclusively on the latter type of material (the free prose still awaits processing). This means that I am making statements about the forms that dialect speakers prefer to use when they are conscious about their own dialect. There is no doubt that this gives a more regular



pattern than analyses of fluent speech might give. It is conspicuous that "i-dialect" speakers often fluctuate between /i/ and /u/, and I have the impression that the bias is in favour of /i/ in such cases as far as my questionnaire material is concerned.

During my work I gradually realized that the phenomenon of "i-dialect" is explicable in terms of phonological rules, and fortunately it was possible to design new, supplementary questionnaires every time a new generalization emerged from the data. Thus, there was ample opportunity to recheck the validity of my observations and of my provisional generalizations.

The following is a quite preliminary report which focuses on the patterns that are firmly established after a cursory inspection of my data. Several problems are left out of consideration here, since they must await not only a closer study of the present data but also a gathering of comparative material from other "i-dialect" areas. As far as these other areas are concerned, the very limited experience I have with phonetic material from the Upernavik district and from East Greenland, seems to me clearly indicative that the basic pattern - as outlined in the present report - is the same everywhere, but the validity of this contention remains to be proved.

In view of the sketchy character of this report I do not feel that it would be reasonable to give anything like a catalogue of my data here. Recorded forms are cited "anonymously". They are taken from Kap Farvel (VI) material, unless otherwise stated. As for the phonetic presentation I have chosen a broad phonetic (semi-phonemic) transcription of the type used in my monograph (Rischel 1974). The only innovation is that I use an exponent letter /<sup>V</sup>/ to indicate the rather faintly articulated labial glide in forms such as /ini<sup>V</sup>it/ 'human beings'.



### 3.2 Comparative generalizations to be made about "i-dialect" forms

Before attempting to establish phonological conditions for "i-dialect" forms it is reasonable to test one specific hypothesis, viz. that mutually related forms tend to have the same vowel (i.e. either /u/ throughout a set of related forms, or /i/ throughout). A tendency or regularity of this kind might seriously confuse the pattern. - Interestingly enough, a glance at the data immediately reveals that levelling of this kind plays no discernible role in the Kap Farvel dialect (on this point I dare not make any statements about other dialects). The verb for 'being shy' (CWG /ittuu<sup>r</sup>ppuq/) is /itøii<sup>r</sup>puq/ (previously undoubtedly /ittii<sup>r</sup>ppuq/), but the participle (meaning 'shy') is /ittuu<sup>r</sup>tuq/ (CWG /ittuu<sup>r</sup>ttuq/), i.e., there is no avoidance of a vowel alternation in the second syllable of the base. Similarly, although the counterpart to CWG /inuuniq/ 'life' is /iniiniq/, the greeting /inuLLu<sup>w</sup>a<sup>r</sup>nna/ 'goodbye' (literally 'live well!') is reflected as /inuudu<sup>w</sup>a<sup>r</sup>nna/.<sup>1</sup> The counterpart to CWG /iLLu/ 'house' is /iqd̥iq/, but the word for cottage ('wretched house') is /iqd̥urujuk/. These examples give further evidence of vowel alternation in the second syllable of a base.

An abundance of data of this kind entirely disproves the hypothesis that there might be a significant tendency toward invariance within sets of etymologically related forms. At the same time they testify to a phonological regularity in the Kap Farvel dialect, viz. that /u/ is (normally) preserved if followed by a non-labial consonant (cluster) plus /u/. - I shall return to this regularity below.

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1) /q/ is the regular counterpart to /L/ of other West Greenlandic dialects (/q/ is a retroflex affricate, as far as I have been able to ascertain; Petersen 1970 writes /dʒ/ but does not consider this symbol quite appropriate).



As mentioned above, Petersen (1970) suggests that neighbouring /k/ and /q/ may help to preserve /u/. It is easy to prove that this is at least not a strict constraint, cf. /inik/ for /inuk/ 'human being', /maanakk̄it/ for /maan(n)akkut/ 'now', /sikiq/ for /siku(q)/ 'ice', /øikiqqirippuq/ for /øikiqqurippuq/ 'is at right angles'. I do not see how one can formulate a constraint that permits all these forms.

It may prove useful to search for other constraints, however, i.e., to search for environments in which /u/ never changes to /i/. No matter how sporadic and irregular the sound shift may be, it would not be expected to violate constraints, and thus the formulation of constraints (rather than positive conditions for the sound shift) is a way of detecting whether there is at all anything like phonological regularities involved. It is not a priori clear what would be the appropriate domain of such constraints, but I decided tentatively to use a stretch corresponding to the typographical word (i.e. anything written without internal interspace) as a frame of reference. As it turned out, this domain, which can be redefined phonologically as a "phonological word" on the basis of prosodic characteristics (Rischel 1974, pp. 11 and 79), turned out to be a highly appropriate choice.

- The most conspicuous constraints detected in this way will be listed (in random order) below. I shall stick to structural generalizations in this section, but in section 3.4 below I shall demonstrate how a study of phonological alternation adds significantly to an understanding of the nature of the constraints in question, both with regard to diachrony and synchrony.

(a) There is never /i/ against CWG /u/ in a word initial syllable: KF = CWG /suli/ 'still', /uuma/ 'of that one', /nutaaq/ 'new', etc. etc.

(b) There is never /i/ against CWG /u/ if the vowel is immediately preceded by a consonant or consonant cluster with labial articulation: KF = CWG /aput/ 'snow', /immuk/ 'milk'.



(c) There is never /i/ against CWG /u/ after a syllable with /u/. The preceding syllable may have /u/ because of constraint (a): KF = CWG /uku<sup>w</sup>a/ 'those', /unnuk/ 'evening', or because of constraint (b): KF = CWG /immussu<sup>w</sup>aq/ 'cheese' (traditional CWG: /immuṣṣu<sup>w</sup>aq/). But it may also be because of constraint (d) below, which considerably complicates the pattern:

(d) As mentioned earlier, there is a strong tendency to preserve /u/ if the following vowel is /u/ and there is no intervening labial consonant: KF = CWG /i<sup>r</sup>nnisuttuq/ 'giving birth' (but with an intervening labial: KF /i<sup>r</sup>nnisippuq/ 'gives birth' against CWG /i<sup>r</sup>nnisuppuq/; further examples in the beginning of this section). This is at first sight a rather crazy constraint: why should /u/ be protected before /u/ only if there is no intervening labial? One might suggest that there is an umlaut mechanism involved: /u/ has gone at least part of the way to /i/, but /u/ is restated due to influence from the vowel of the following syllable; however, the distant assimilation in terms of lip-rounding cannot work if the chain is broken by a labial segment.

Another explanation has been offered to me by Eli Fischer-Jørgensen (personal communication): in forms such as /i<sup>r</sup>nnisuttuq/ the consonantal stretch /tt/ was probably influenced by preceding and following /u/ and hence spoken with liprounding; it therefore protected the preceding vowel from going to /i/. The labial /pp/, on the other hand, would not show any clear difference between rounded and unrounded varieties, and hence did not give similar information regarding the preceding vowel. Therefore, /u/ was not protected before labial plus /u/. - This is a very interesting possibility; I entirely agree that there must have been labialization of consonants in some environments (see below), and that this feature was probably masked in labial consonants. However, there is a seeming conflict in that - as far as the evidence at my disposal goes - such secondary articulation in consonants is preserved more in the dialects that make the least use of constraint



(d). As long as there is insufficient information especially with regard to the Upernavik dialect, I dare not argue about this, however.

I think it is plausible enough that there used to be a shift of /u/ (either all the way to /i/ or to something that would eventually end up as /i/) also in these environments. This is in fact attested in other representatives of "i-dialect": I have noted forms such as /sikikkut/ e.g. from the Upernavik district against CWG and KF /sikukkut/ 'via the ice'. But the reestablishment (or preservation) of /u/ in the southernmost dialects may be a protective measure. If the first of two consecutive syllables with /u/ changes its vowel into /i/, one of two things may happen: the vowel shift may reapply and shift /u/ of the next syllable since it is no longer preceded by /u/ (in an alternative analysis: the vowel shift may apply simultaneous to both syllables), or the vowel shift may not be allowed to reapply. Apparently the Upernavik and East Greenland dialects are characterized by prohibiting a reapplication, whereas the southernmost dialects favour a uniform treatment of both syllables.

In the case of two consecutive syllables with /u/ there is a very obvious prevalence of preservation of both vowels as /u/. I have nevertheless noted some instances where both vowels are shifted. Thus, one of my KF informants insisted that one would say /kaagi<sup>r</sup>tɕi<sup>r</sup>qɕita/ corresponding to CWG /kaagitu<sup>r</sup>LLuta/ (/kaagi<sup>r</sup>ttu<sup>r</sup>LLuta/) 'we, eating cake', but I suppose that other persons might say /kaagi<sup>r</sup>ttu<sup>r</sup>qɕuta/. As for the Alluitsoq dialect (within area V of Fig. 1), a young informant of mine used such forms as /ma<sup>r</sup>LLi<sup>r</sup>LLi<sup>r</sup>iniit piŋasi<sup>r</sup>LLi<sup>r</sup>iniit/ 'either two or three' (CWG /ma<sup>r</sup>LLu<sup>r</sup>LLu<sup>r</sup>unniit piŋasu<sup>r</sup>LLu<sup>r</sup>unniit/), although he had a general prevalence of preserved /u/ in two consecutive syllables with etymological /u/. Now, this shifting of both vowels would lead to forms such as /sikikkit/ (which I have encountered as a variant of /sikukkut/), and similarly \*/i<sup>r</sup>nnisi<sup>r</sup>tɕiq/ instead of /i<sup>r</sup>nnisuttuq/ (which I have heard only with /u...u/). Forms such



as /i<sup>r</sup>nnisuppuq/, on the other hand, could never get any further than /i<sup>r</sup>nnisippuq/ since the following /u/ is protected anyway by the labial consonant (constraint (b)). Hence, if for some reason there was a reaction against such a drastic change as /i<sup>r</sup>nnisuttuq/ to \*/i<sup>r</sup>nnisittiq/, modern \*/i<sup>r</sup>nnisitøiq/, it would only be necessary to restate /u/ in cases where there was no intervening labial, since this is the only case in which two consecutive syllables can both undergo the vowel-shift.

For the sake of completeness I shall add that /u/ may be preserved by constraint (d) in more than two consecutive syllables. Thus the KF form corresponding to CWG /niiqquluttuq/ 'creaking' is /niiquluttuq/, as expected.

It is interesting to note that paradigmatic levelling plays no role in the treatment of /u/ before /C<sub>1</sub>u/; on the contrary, the occurrence of /u/ here often creates an alternation, because the vowel is shifted in other forms. This fact might perhaps speak in favour of the umlaut interpretation since umlaut is known from other languages to produce alternation, whereas one might perhaps expect a protective mechanism to preserve, rather than break down, a conspicuous relatedness among wordforms. That is hardly conclusive, however.

Constraints (a) through (d), if properly applied (see below) appear to account for the vast majority of forms that are consistently spoken with /u/, not /i/. There is, nevertheless, a residue of bases, suffixes, and complex stems which defy any explanation in terms of a phonological generalization. One may attempt to define certain tendencies to preserve /u/ under specific circumstances, and indeed, some of the forms with unexpected /u/ agree with Petersen's suggestions (1970, p. 332), which I cited above. The allative ending /nut/, for instance, has /u/ in southern WG, and it is natural to assume that this is due to the need of avoiding a merger of allative /nut/ and ablative /nit/.



(East Greenlandic permits the vowel shift in allative -nun, -nin, according to Thalbitzer 1921, p. 133; note that the ablative forms have been replaced by instrumental forms in this dialect.)

As for Petersen's contention that /u/ is often preserved in the context of back consonants, there are quite a few exceptions to the shift of /u/ to /i/ which may have this explanation, viz. forms with a uvular plus /u/, e.g. the suffix /qu/ 'command' (KF /qaaqu<sup>w</sup>aa/ 'invites him'), and the suffix alternant /ru/ 'future time' (KF /aasaru/ 'next summer') as against /ŋi/ (from /gu/) 'id.' (KF /aqaŋi/ 'tomorrow').

But as mentioned earlier, these are not real constraints since it is easy to find counter-evidence. Moreover, there is a residue of unexpected occurrences of /u/ anyway, often so that a formative may occur in some lexicalized forms with /u/ and in other forms with /i/ although there is (according to my statements) no relevant difference in the phonological environments, cf. /piluk/ 'bad' in KF /naasupilu<sup>w</sup>it/ 'weeds' versus /uqali-pilippuq/ 'scolds'. - A study of Thalbitzer's (1921) texts from East Greenland even shows a certain amount of free variation between /u/ and /i/, e.g. in forms containing the stems /taku/ ~ /taki/ 'see', /isuma/ ~ /isima/ 'thought; think' before invariant suffix configurations. I have no explanation of this. In the Kap Farvel dialect the norm of elderly and middle-aged persons did not seem to waver very much, whereas there was a discernible difference between the norms of different generations, as one might expect.

I have tried to show that the general picture is not just fuzzy, not even in East Greenlandic. It is significant that the exceptions to the generalizations are forms in which /u/ is unexpectedly retained rather than forms in which /u/ is unexpectedly shifted to /i/.

In the following I shall neglect the exceptions, since there is such a massive bulk of evidence in favour of the linguistic significance of the regularities.



Constraints (a)-(d) above are not well-formedness conditions on phonetic forms. It is perfectly possible to have /i/ in all of the environments in question if only this /i/ does not reflect /u/ diachronically, cf. the underlined vowels of /imiq/ 'water', /usii/ 'its cargo', /ilumut/ 'certainly'. The constraints only define the conditions under which /u/ cannot go to /i/.

Now, it is interesting both from the point of view of diachrony (relative chronology of sound-shifts) and from the point of view of synchronic analysis to know whether these constraints are properly stated in terms of surface structure, i.e., whether the segments entering the prohibiting contexts are always surfacing. There is no doubt that this was the case at the time when the pattern came into existence, but is it correct to formulate these constraints with reference to the surface structure of modern Greenlandic? It is possible to throw light upon this question by studying forms in which the relevant segments in the context of /u/ have undergone assimilation.

In most dialects of Greenland the diphthongs /ai/ and /au/ have been entirely assimilated to /aa/ word internally (Rischel 1974, p. 73 ff). Now, what is the fate of /auC<sub>1</sub>u/ in "i-dialect": is it reflected as /aaC<sub>1</sub>u/ or /aaC<sub>1</sub>i/? My material suggests that there is a good deal of vacillation here. At any rate, there are examples enough of preserved /u/ to make it entirely implausible that these are random exceptions to the general pattern: /naʊʂut/ 'flowers' is reflected as KF /naasut/; /auk+luunniit/ 'or blood' is reflected as KF /aaquunniit/; etc.

As for /u/ preceded by a labial consonant or consonant cluster, it is worth while examining what happens if the cluster consists of a labial plus another consonant since there is regressive assimilation here (Rischel 1974, p. 34 ff). In this case there is overwhelming evidence in favour of a constraint to the effect that /u/ is preserved after a labial even if the



labial is eventually assimilated: /aɑŋŋuuq/ 'yes, it is said' (obviously containing /aap/ or /aam/ 'yes') is reflected as KF /aɑŋuuq/; ?/ani+wluni/ (CWG /aniLLuni/) 'going out' as KF /aniɖduni/; etc.

### 3.3 The vowel shift as distant assimilation

In the preceding section I have attempted to demonstrate that "i-dialect" is not a matter of "sporadic" replacement of /u/ by /i/. If the sound shift is assumed to occur without any language-internal, phonological conditioning it is nevertheless subject to systemic limitations. It is natural now to ask: do these limitations make sense? Is it "natural" that /u/ is preserved in such and such environments? If a sound-shift is subject to phonological conditioning (positive or negative), it is hopefully so that the conditions are either all explicable in terms of general phonetic mechanisms or all deducible from one general principle.

Constraints (b), (c), (d) may be referred to one common principle if rounded vowels and labial consonants are supposed to share a cover feature of labiality. The generalization, then, runs as follows: /u/ is protected if it is part of a segment sequence exhibiting labial harmony, viz. a sequence of the structure [+labial]C<sub>0</sub>[+labial]. This is true, in all dialects, of a vowel that is non-initial in such a sequence (i.e. which occupies the position after /uC<sub>0</sub>/ or after a labial consonant). If, however, /u/ is absolutely initial in the sequence (i.e. is followed but not preceded by a labial segment) the principle applies regularly only in the southern dialects, and only if the closest following labial segment is a vowel (see discussion of constraint (d) in section 3.2).

The fact that /u/ is not protected before a labial consonant (cluster) plus /u/ (/i<sup>r</sup>nnis<sub>i</sub>ppuq/ in spite of /i<sup>r</sup>nnis<sub>u</sub>ttuq/)



disturbs the otherwise neat principle of labial harmony. It makes diachronic sense, however, if the vowel-shift was initiated as a diphthongization, i.e. a delabialization of the initial part of /u/: under that interpretation it is nothing surprising that preceding and following labial consonants have had different effects.

Constraint (a) has no connection whatsoever with the other constraints. It is not very obvious why the position in an initial syllable should prohibit a change of vowel quality which occurs spontaneously in other syllables, unless the change in question were some kind of laxing (reduction), which clearly is not the case.

It must be concluded that the constraints formulated in section 3.2 are observationally adequate but fail to provide a simple and natural characterization of the phenomenon of "i-dialect" in terms of general phonetic theory.

The logical move, then, is to turn the whole thing around and work on the assumption that we do not have a spontaneous sound-shift which is subject to a number of constraints but rather a conditioned sound-shift. Can it be true that the change of /u/ to /i/ occurs only in one particular type of environment, and is in fact due to the influence of that type of environment?

If we look at the repertory of forms with /i/ for /u/, it is a true generalization that this vowel segment is preceded by a syllable with an unrounded vowel, and that there are no intervening labial consonants. Hence the sound-shift may be described as assimilation to a preceding non-labial sequence of segments. The vowel /u/ (perhaps first the initial part of the segment) is delabialized by assimilation to a preceding vowel /i/ or /a/ unless there is an intervening labial. From the phonetic point of view this is an entirely natural type of mechanism.

This description absorbs constraints (a), (b), (c) into one rule of assimilation but sets off constraint (d) from the rest. That is interesting since it is exactly constraint (d) that has a



more limited distribution than the others. I think the assimilation hypothesis lends support to the assumption that constraint (d) is in fact a protective measure found in cases where /i/ from /u/ might serve as a new context for delabialization of a following /u/, i.e., where the assimilation might apply iteratively. Now, why would the southern dialects admit such iterative application rather than the Upernavik and East Greenlandic dialects? I think there is an answer to this. In the Upernavik area there is evidence (according to Lynge 1955 as well as my personal experience) of a sporadic retention of a labialization component in consonants that follow after an /u/ that has been shifted to /i/, e.g. something like /naakkajii<sup>w</sup>q<sup>w</sup>/ as the counterpart of CWG /naaxxaguuq/ 'no, it is said', and this phenomenon is also attested in Thalbitzer's East Greenlandic material (1921). Now, as long as such labialization is present it prohibits a following /u/ from shifting to /i/: if /sikukkut/ goes to /siki<sup>w</sup>kk<sup>w</sup>ut/ it is entirely regular for the last /u/ to be preserved since it is still preceded by a sequence containing labiality, and it is no wonder that such a form may be continued as /sikikkut/ with an eventual loss of labiality but no extension of the assimilation rule so that it would apply iteratively or across the board. In the southern dialects, on the other hand, there is no trace of such labialization: it may have vanished so early that the assimilation had not yet been stabilized as a mechanism operating just across one syllable boundary but no more. Hence the situation was stabilized by restoring /u/ according to the sequential constraint (d) so that the ultimate output was /sikukkut/ (or possibly /sikikkut/ if the assimilation was given a free run) rather than /sikikkut/. (Incidentally, the existence of a mechanism of restoration is corroborated by a number of forms in the southernmost dialects, in which etymological /i/ or /ĩ/ is shifted to /u/, e.g. /u<sup>w</sup>aguttunni/ 'in us', as against CWG /u<sup>w</sup>atginni/. There are some quite specific generalizations to be made about these "hypercorrect" forms, but they fall outside the scope of the present paper.)



### 3.4 Alternations created by the vowel-shift

I have mentioned several times that the KF dialect has numerous, and in fact regular, alternations between indicative and participle forms, the last syllable of the stem alternating between /u/ and /i/ if the conditions for delabialization are present: model example /i<sup>r</sup>nnisippuq/ - /i<sup>r</sup>nisuttuq/ as against /tuquppuq/ 'kills' - /tuquttuq/ with invariant /u/ (the preceding syllable has /u/) and /øikippuq/ 'arrives' - /øikitøiq/ with invariant /i/ (the vowel was /i/, not /u/, in the first place). There are innumerable other instances of alternation due to constraint (d), cf. /inik/ 'human being' (from /inuk/) but /inurujuk/ 'giant' (suffix /rujuk/), also cf. the example /sikiq/ - /sikuqkut/ mentioned earlier. Transparent suffixes may exhibit the same alternation due to the influence of a following suffix: /paami<sup>j</sup>it/ (from /paami<sup>j</sup>ut/ 'inhabitants /-miut/ of the mouth of the fjord /paa/' 'Frederikshåb' but /paami<sup>j</sup>unuka<sup>r</sup>ppuq/ 'travels to Frederikshåb'.

Suffixes also exhibit extensive alternation depending on the structure of the preceding stem, cf. the participle suffix /tuq/ ~ /øiq/ in /tuquju<sup>r</sup>ttuq/ 'blue' versus /qi<sup>r</sup>nni<sup>r</sup>tøiq/ 'black', /sunaa<sup>r</sup>øiq/ 'yellow', or the suffix /suuq/ ~ /suiq/ 'who has the quality (or: does so) to a high degree' in /pu<sup>r</sup>ttusuuq/ 'high', versus /pu<sup>w</sup>alasiiq/ 'fat'. This is not just a matter of lexicalized forms with one or the other vowel, since the same alternation occurs in suffixes that can occur after practically every conceivable wordform, cf. KF /quuq/ ~ /qiiq/ 'it is said (that)' in /nuquppuqquuq/ 'they have been used up, it is said', /aani<sup>j</sup>arunquuq/ (or /aanuqquuq/) 'fetch it!, it is said' versus /tas-saiq/ 'that's enough!, it is said', /iki<sup>j</sup>i<sup>r</sup>ssinnaavaaqingiq/ 'he can help you, it is said'.

As a final example I shall quote the suffix /luunniit/ 'or', which occurs in the KF dialect in a variety of forms with /uu/ or /ii/, and with /l/ or /q/ (depending on the preceding forma-



tive). If occurring in two consecutive forms (with the meaning 'either - or -'), it may or may not alternate depending on the last syllables of the forms to which the suffix is added, e.g. /ataasi<sup>r</sup>q<sup>u</sup>i<sup>i</sup>niit ma<sup>r</sup>q<sup>u</sup>q<sup>u</sup>u<sup>i</sup>niit/ 'either one or two' (cf. the deviant forms in the Alluitsoq dialect cited in section 3.2 above); /puu<sup>r</sup>lu<sup>u</sup>u<sup>i</sup>niit kaagi<sup>r</sup>q<sup>u</sup>i<sup>i</sup>niit/ 'either a ball or a cake'.

This shows that there is no general tendency to achieve an invariant manifestation of formatives as far as /i/ for /u/ is concerned. Examples like the last-mentioned ones are clearly reminiscent of the appearance of forms in languages with a functional system of vowel harmony (Thalbitzer 1921, p.124 did in fact notice a tendency toward VH in East Greenlandic, but he speaks of it as a quite sporadic phenomenon found with some suffixes).

#### 4. Problems in a synchronic, generative description of "i-dialect"

In the preceding sections I have shown that (i) the sound-shift initiating the phenomenon known as "i-dialect", was rule governed, and (ii) this sound-shift has implemented a rather regular pattern of vowel alternation. The question, now, is how to deal synchronically with the behaviour of vowels in dialects of this type. For simplicity I shall start with the question of synchronic rule, and approach the question of underlying representation afterwards.

##### 4.1 Is there a synchronic rule?

Generative phonologists have always taken much interest in alternations because these were taken as evidence for phonological rules. There has been a tendency to go very far in the claim that alternations reflect synchronic rules, but recently there has been an increasing degree of scepticism toward an indiscriminate use of rule schemata in linguistic description. This scepti-



cism is an offspring of a desire to make the description reflect something real, in particular: some kind of psychological reality. Unfortunately, the meaning of this term in modern linguistic literature is quite vague, and there has not been too much progress so far toward a real understanding of the nature of the problem.

Even a description that does not claim to be psychologically "real", may be subject to evaluation in terms of plausibility. We do not know what goes on in individual speaker-listeners' heads, nor do we know what mental patterns are common to users of a particular language, and one may argue that linguists have no obligation to describe just that. But it must certainly be worth while trying to distinguish regularities which may be relevant to the way in which users of the language master it, from other possible generalizations, which are likely to be irrelevant from that point of view. One should, of course, be gravely suspicious toward rigid (and generally quite aprioric) "psychological" interpretations to the effect that a certain regularity is a rule in the generative sense, but it seems fruitful to attempt to provide evidence for (or against) the contention that speaker-listeners are likely to internalize a mechanism that is functionally equivalent to such a rule. To provide, or evaluate, such evidence is no straightforward task, however.

In the case of a pattern of alternation it is an oversimplification of the problem just to ask: is the regularity likely to be mastered by rule? There are at least three meaningful proposals: (i) all the forms involved may be individually stored (lexicalized in a strict sense); (ii) there is an awareness of mutual relatedness among partially similar forms, and the recurrent patterns of alternation within paradigms are mastered so that they can be used productively; (iii) there is some kind of analysis of wordforms into building-blocks (more or



less co-extensive with the linguist's formatives), each of which is stored mentally together with information about its own pattern of alternation as well as its conditioning effect on alternations in adjacent items. - In all likelihood there is normally a good deal of redundancy in the mental representation; there is no reason why a speaker-listener should not store several inflected or derived forms containing the same base (solution (i)) although some of them may be deducible from the others according to patterns mastered by him (solution (ii) or (iii)). We do not know, in principle, what is stored mentally, although studies on productivity (as suggested by Ohala) may provide some information.

The formulation and testing of such proposals (and of other, more or less similar proposals that one might find worth formulating) has not much to do with the current, transformation-generative paradigm of linguistic description (although it is a merit of recent work to have emphasized the importance of the question of internalized representation of linguistic patterns). I do not think that one should start by asking: "is there, or isn't there, an internalized equivalent to the schema  $X \rightarrow Y / W\_Z$ " (meaning: representation X is replaced by representation Y in environment  $W\_Z$ ); it must be determined first to what extent an alternation is at all mastered in terms of generalized mechanisms. That, in itself, is certainly a difficult issue.

With regard to "i-dialect", the null-hypothesis, i.e., that all wordforms exhibiting some reflex of etymological /u/ are completely lexicalized (stored in their entirety in the brain), can be dismissed without serious testing. Eskimo is a "polysynthetic" language, which in principle allows for an unlimited number of different wordforms to be construed by suffixation to one common base. The unlimited character of suffixation is proved by the fact that a suffix may even recur in



such a stretch, each time restoring the same conditions for further suffixation, e.g., a noun stem may be converted into a verb stem by suffixation of /u/ ('to be'), and the resultant verb stem (with more or less elaboration by other suffixes) may in turn be converted into a noun stem by suffixation of /ʃu(q)/ ('one who -s'), so that the conditions for forming a verb by suffixation of /u/ ('to be') once again are met. (Maybe such repeated use of a suffix occurs chiefly if part of the sequence is lexicalized with a specific meaning, e.g. /iga+ʃuq/ 'one who cooks' has a lexicalized counterpart /igaʃuq/ 'cook' from which one may form /igaʃu+u+ʃuq/ 'one who is a cook'. However, it is worth noting that the relatedness of /igaʃuq/ to /iga/ and /ʃuq/ is transparent enough.) - Given the considerable number of different suffixes, and the enormous number of consecutive suffixes that one may often identify in Greenlandic wordforms, it is a priori clear that speakers and listeners cannot do with a stored inventory of wordforms (this is not in the first place a matter of assumptions about limited storage capacity in the brain; the core of the problem is that it cannot possibly be true that every fluent speaker-listener has previously encountered all grammatically possible wordforms). Anyway, the general lexicalization hypothesis can be easily disproved by the fact that one can take international (Danish) terms and add Greenlandic suffixes to them (often with little or no accommodation of the stem to Greenlandic phonotactics). Stems such as trillebøri 'wheelbarrow', præsidenti 'president' are entering the language all the time, and such a base may be elaborated by suffixation at one's discretion. In oral or written communication such hybrid forms will normally be immediately understood. The interesting thing is that the principles according to which suffixes are added after each other in such forms, are entirely Greenlandic. It is only the base that constitutes a chunk of foreign matter.



In principle, the inventory of forms is an open inventory whose size cannot be defined. This is true both of entire word-forms and of invariant stems (understood as the part of a word-form - however elaborate - that is invariant in an inflectional paradigm).

There is a different proposal, however, that might be more worthy of serious consideration, viz. that dyads of formatives are stored lexically. If, for a moment, we disregard loanwords and other foreignisms and consider the inventory of bases as a closed inventory, it is certainly possible to set up a model according to which every conceivable sequence of two formatives (or of formative clusters in some instances)<sup>1</sup> is lexicalized. The number of such dyads will be very large, of course, but not unlimited, and hence it cannot be disproved a priori that word-forms containing bases which are already well-established in the language, are mastered with reference to such dyads.

Under such a hypothesis the conversion of content into expression - in generative-semantic terms: the lexical insertion - would be a complex matter. Each constituent of a word-form must be looked up in the internalized lexicon twice: it must be checked whether it has an entry together with the preceding constituent, and whether it has an entry together with the following constituent (unless, of course, the constituent in question is word initial or final, in which case there is only one dyad involved). Hence, if the KF form /muluḏḏuni/ 'as he stayed away longer than expected' (/mulu/ 'stay away etc.', /ḏḏu/ 'contemporative mood', /ni/ 'he himself') does not happen to be stored in its entirety, it must be looked up as /muluḏḏu/ and /ḏḏuni/. There must then be some strategy according to which such consecutive dyads are amalgamated. This strategy is

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1) The concept of "formative dyad" raises the same question as to psychological reality (e.g. of grammatical boundaries) as the concept of "formative" itself (in addition to the implausibility caused by the syntactically dubious status of the dyad).



simple if it is just a matter of shrinking material of the type XY, YZ into XYZ (as in /muluqḡuni/), but what if there is an alternation in the shared part? The dyad consisting of 'contemporative' plus 'himself' must have a variant /qḡini/ since 'as he slept' is /siniqḡini/, composed of /siniqḡi/ and /qḡini/. Apparently there must be a rule saying: choose the alternant, in each case, that gives no conflict between the phonological representations of two dyads to be amalgamated. This solution is probably sufficient for dialects that adhere strictly to constraint (d) of section 3.2: assume that 'because I ate meat' is /niqḡirama/; 'if I eat meat' is /niqituruma/; 'because I entered' is /isirama/; and 'if I enter' is /isirima/. We can, then, posit the following dyads: /niqḡir/ ~ /niqitur/ 'eat meat'; /ḡira/ 'because of eating'; /turu/ 'if eating'; /isira/ 'because of entering'; /isiri/ 'if entering'; /rama/ 'because I'; /ruma/ ~ /rima/ 'if I'. There will be only one possible output in each case on account of the principle of no conflict (whereas there would be two possible outputs for 'if I eat meat', viz. /niqituruma/ and /niqḡiruma/, if there were a variant /ḡiri/ along with /turu/ 'if eating').

Dialects without constraint (d) pose no specific problems. The difference can be handled in terms of lexical representation of dyads: 'eat meat' is stored as /niqḡir/, 'if eating' is stored as /ḡiru/ (/tiru/) ~ /turu/. The principle of no conflict between dyads uniquely determines the output for 'if I eat meat' as /niqḡiruma/ (/niqituruma/).

Etymological /u/ is sometimes reflected "idiosyncratically" as /u/. Now, if the conditional mood formative does not ever occur as /ri/ (i.e., if we find /ru/ in environments where the general principles of "i-dialect" would suggest /ri/), the dyads containing this formative are simply not stored in a variant with /i/: we have /ruma/ 'if I' but no /rima/, /isiru/ 'if entering' but no /isiri/ for such a dialect, and hence the form meaning 'if I enter' comes out automatically as /isiruma/.



To a first approximation, then, phenomena such as the /u/ - /i/ alternation can be handled in terms of storage of dyad variants plus an entirely general principle of selection. Are there any principled arguments about such an approach to linguistic description?

If one believes that there is a level of linguistic description at which lexical items (or lexical entries) are grammatical constituents, a description in terms of formative dyads is not immediately attractive. Let us consider /niqituruma/ 'if I eat meat' from the point of view of internal structure. The first formative dyad, /niqitur/ 'to eat meat' is (according to my definition) a stem, and hence it makes perfect sense to speak of it as a grammatical constituent at a non-abstract level of syntactical description. The final dyad, /ruma/ 'if I do', may be looked upon as a cluster of inflectional material modifying the stem, and hence it also makes sense to speak of that as a constituent. But what about the middle one: /turu/ 'if eating'? It cannot be a constituent at the same time as the others. However, in semantically based syntax the formation of stems such as /niqitur/ may be interpreted as a kind of incorporation, the abstract constituents being 'meat' and 'eat'. In the framework of such an analysis there is nothing strange in claiming that the verb component 'eat' goes together with the modal modifier to form a surface constituent. We are thus faced with a possibility of conflicting analyses. There may be other types of forms in which it is much more difficult to find a reasonable correlation between formative dyads and possible grammatical constituents, but at least it should be realized that the whole issue is controversial. One cannot a priori dismiss the dyad approach on these premises (as long as it has not been proved that the internalized lexicon is accessible at only one level of syntactico-semantic abstraction).

Another possible argument against the dyad approach is that it is "clumsy". It entails a storage of numerous dyads in



two or more variants instead of a phonological rule. In the framework of transformation-generative phonology one might also claim that it is not "insightful" because it fails to reveal the phonological mechanism involved. The latter argument is valid in the context of a strictly descriptive linguistic approach; but the descriptive appropriateness of phonological generalizations does not, of course, imply that such generalizations are components of the mental representation of language. We do not know what is elegance and insightfulness in the latter context. It is highly interesting if generalized phonological mechanisms can be demonstrated to have a mental counterpart, but one does not ever achieve that goal by just showing that rules "work". It seems to me more useful to examine whether there is perhaps something else that works. It is only in cases where one cannot envisage other, equally or more plausible, models accounting for speakers' use of their language that it is likely to be really rewarding to make comprehensive research on the possible "psychological reality" of phonological mechanisms.

From this point of view I find it worth while taking a phonological phenomenon such as vowel harmony (or other assimilatory mechanisms) which really presents a strong case for the adequacy of phonological generalizations, and to see if the relevant data can be handled entirely without specific phonological machinery,<sup>1</sup> viz. by putting more stuff into the "lexicon". I think the dyad approach is, in principle, an interesting alternative to formulaic phonologies because it does not make any reference whatsoever to the specific phonological structure

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1) By "specific" I here mean: specific to the statement of this particular regularity, as against general mechanisms such as the arrangement of items in a sequential order manifested as temporal order.



of the constituents that make up wordforms, but only to the quite general criterion of greater or lesser partial similarity among dyads. Notions such as "segment", "feature", "(segmental) environment", "alternation" (or "X becomes Y") have no place in this model; it is in fact aphonological. That is the interesting property of it. (Other aphonological models might serve the purpose of the argument equally well.)

Accordingly, the question is not whether the dyad approach looks more or less silly from the point of view of current phonological theories but whether or not this kind of model fails (totally and irreparably) on some capital point.

In the beginning of this lengthy discussion of formative dyads I mentioned that loanwords and other foreignisms would be disregarded for a moment. Now they must be taken into consideration. It is of crucial importance whether there is evidence for a productive, creative use of some phonological mechanism in establishing new formative dyads, or new variants of formative dyads. A study of lexical borrowing is one approach to the solution of that question (along with studies of language acquisition and language change).

As I see it, examples such as KF /kaagi<sup>r</sup>q̄q̄iiniit puu<sup>r</sup>lu-luuniit/ 'either a cake or a ball' are clearly indicative of the use of a generalization referring to configurations of segments. At the time when the Danish words kage and bolle came into the dialect, the pattern of "i-dialect" was already there (there is indisputable evidence for "i-dialect" in southernmost Greenland in the earliest phase of colonization). The possibility of extending this pattern to newly acquired lexical items, proves the existence - at the time of borrowing, at least - of a synchronic regularity that is sensitive to the specific vowel qualities of successive syllables.

This, then, is the core of the matter: phonological generalizations emerging from a corpus of wordforms do not constitute evidence for the (synchronic) mental reality (in any sense



of this term) of the regularities in question, even though the finding that the generalizations hold for any size of corpus that the linguist chooses to work with, may be strongly suggestive of productivity. On the other hand, the dynamics of language, as it appears in the process of borrowing (inter alia), may give the irrefutable proof. If sequences containing borrowed items are operated upon in accordance with a well-established phonological generalization, this must be substantial evidence for the relevance of that generalization to the speakers' command of their language (I here make use of Paul Kiparsky's classical notion of "substantial evidence" in linguistics, which is hardly a controversial issue today, although it has not quite had the practical effect on linguistic work in the more recent years that one might expect).

It must be emphasized, at this point, that the processing of borrowed lexical items only testifies to the existence of some kind of phonological mechanism (as against the lexical storage exemplified by the dyad model). It does not necessarily give us any hint as to the nature of that mechanism. In the case of "i-dialect" the evidence just tells us that the conditioned alternation of /u/ and /i/ is, or rather was at some time, a psychological reality. Whether it is appropriate to describe that regularity in terms of a rule replacing /u/ by /i/, or in terms of alternation in the strictly static sense, is not at issue as yet. We have, however, solid evidence for the psychological reality of phonological conditioning: /kaagiq/ has come to condition the suffix alternant with /ii/ just because it contains a front vowel, and for no other conceivable reason. This is all I wish to argue here, as far as mental representation is concerned.

Even such a modest claim as this should be taken with all appropriate reservations. Firstly, it should be understood that the loanword evidence only proves the possibility for a phono-



logical regularity to be employed; it does not directly tell us anything about the way in which wordforms in general are handled by "i-dialect" speakers. If a descriptive model makes psychological claims, it is wise to consider these as claims about phonological regularities which the speaker(-listener) may make use of rather than claims about his actual strategy. It must be understood once and for all that there is a practically infinite capacity of lexical storage at his disposal.

Secondly, it must be stressed again that the loanword evidence is temporally limited. "i-dialect" speakers today, who use suffixal /i/ for /u/ after /kaagiq/ 'cake', may not have access to any phonological conditioning pattern. If they use suffixal /i/ (not /u/) quite regularly after /kaagiq/, it may be because they master the fact that this lexical item "takes" suffixes in /i/ rather than /u/; if this is true, they still master a phonological regularity since the alternation between /u/ and /i/ is involved, but the conditioning is no longer phonological. However, it is also possible that neither the phonological conditioning nor the phonological alternation is mastered as such any longer: this means either generalization of one alternant or complete lexicalization of formative clusters, and this is the point where the phenomenon ceases to have any phonological content.

From the point of view of phonological typology one may be content with the finding that there has been some kind of psychological reality associated with the phonologically conditioned alternation between /u/ and /i/, and I shall leave it at that here. Nevertheless, it may be of separate interest to trace the fate of this pattern in some particular dialect (for contemporary speakers this may be done by "experimental phonological" methods, as suggested by John Ohala). It would be interesting to know exactly under which circumstances, and at which rate, a



phonological regularity is likely to decay.<sup>1</sup>

If, now, we consider the pattern of "i-dialect" as a fully operative phonological regularity, the question is how to state it. What does such a mechanism do, and what kinds of representations does it operate upon? I shall touch upon these questions in the next section. To avoid being misunderstood, I shall emphasize again that the following discussion in terms of rule formulation etc. is strictly descriptive: it entails absolutely no claims about the nature of internalized phonology, except for the very claim that it is possible for the "i-dialect" pattern to be mastered (somehow) as a phonological regularity.

#### 4.2 Directionality and underlying representations<sup>2</sup>

As shown in section 3.2, etymological /u/ in a non-initial syllable may be continued as /u/ or /i/. If none of the constraints (a), (b), and (d) apply, the vowel reflex will be dependent upon the vowel of the preceding syllable. In section

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1) "Assibilation" in Greenlandic is a typical example of a decaying rule, cf. Rischel (1974, p. 260-275). Again, a study of loanwords turns out to be rewarding. For example, it may be observed that the participial suffix /tuq/ becomes /suq/ by assibilation after syllables with /i/ in loanwords of a certain age. Hence one says /hiiszi<sup>r</sup>ssuq/ (not /hiiszi<sup>r</sup>ttuq/) 'one who rides a horse; rider' (from /hiiszi/, Danish hest 'horse'), whereas there seems to be vacillation in /sikkili<sup>r</sup>ssuq/ or /sikkili<sup>r</sup>ttuq/ 'one who rides a bicycle' (/sikkili/, Danish cykel) and no assibilation at all in /piili<sup>r</sup>ttuq/ 'one who drives a car' (/piili/, Danish bil). - Note that the treatment of the loanword stems is essentially the same in all instances, viz. addition of final /i/, but this added syllable does not have the same conditioning effect with regard to assibilation in recent loans that it used to have.

2) The term "directionality" is used here in accordance with Eliasson 1974 and Rischel 1974.



3.2 it was suggested that we get /i/ unless constraint (c) applies; in section 3.3 it was suggested that we get /i/ only if the conditions for distant assimilation (delabialization harmony) with the preceding syllable are met. In terms of underlying representation these statements may be considered equivalent: we have underlying /u/ which sometimes shifts into /i/. But is there synchronic evidence for anything but an alternation set /u/ ~ /i/: is it possible to argue in favour of underlying /u/ on a synchronic basis?

Word initial syllables have /u/, not /i/, as a continuation of /u/. It makes absolutely no sense to speak of anything but underlying = surfacing /u/ in this position, e.g. in /uʒi<sup>r</sup>p-puq/ 'returns' versus /iʒi<sup>r</sup>ppuq/ 'awakes'. It is interesting what happens if the alternating vowel of a suffix comes to stand in a word initial syllable, or if the invariant vowel in the first syllable of a base comes to stand in a non-initial position. Unfortunately, it is hard to find evidence of this kind, since the categories of word initial and non-initial formatives are largely complementary. However, there is at least one interesting formative, viz. /una/ 'that one' (or: 'it is'). If occurring as a separate word it invariably has /u/: /una/, but it may be attached "enclitically" to another form, and in that case it follows the rules of /u/ - /i/ alternation: KF /iqqinina/ 'is that one yours?', Alluitsoq /iLLiina/ (id.), versus /u<sup>r</sup>ssuruna/ 'that is blubber (/u<sup>r</sup>ssuq/)'. Since /u/ and /i/ are equally possible, from a surface phonotactical point of view, in word initial syllables, the behaviour of this formative is evidence that /u/ is the neutral reflex of the alternating set. It is the alternant which occurs when no conditions are specified. I think it is useful to interpret the concept of "underlying representation" as meaning just that.



I assume, therefore, that insofar as there is a synchronic rule it is statable as a rule that specifies conditions under which /i/ occurs instead of the neutral representation /u/, rather than a rule that specifies conditions under which /u/ occurs instead of /i/.

This solution is supported by a simplicity criterion: a rule to the effect that /u/ goes to /i/ under specific conditions, is found to apply rather regularly (although some formatives, or formative clusters, must be marked as exceptions). If, on the other hand, the rule were made to state that /i/ goes to /u/ under specific conditions, it must be marked for every formative with /i/ whether this vowel can or cannot undergo the rule. That is, the degree of predictability is incomparably much higher under the former analysis than under the latter.

By the convergence of these two criteria the alternation seems clearly characterized as an asymmetric one. It thereby differs from the regularity observable in languages with a strict pattern of vowel harmony, and - as I argued in section 1 above - that difference is typologically interesting.

As for phonological formalization, the implications of this conclusion are as follows: it is legitimate to represent the alternation set as /u/ on an abstract level of description (it is not an ambivalent segment in the sense of Rischel 1974, p. 346 ff), and to set up a unidirectional rule of distant assimilation. The rule in question must produce a delabialization (unrounding) of /u/ after a syllable with an unrounded vowel, but there are two sets of restrictions associated with it. Firstly, the applicability of the rule is constrained by conditions on the structural description: /u/ does not undergo the rule if immediately preceded by a consonant or consonant cluster containing a feature of labial articulation (constraint (b) of section 3.2), and in some dialects it does not normally undergo the rule if the following syllable has a rounded vowel (con-



straint (d)). Secondly, most dialects prohibit the rule from reapplying to a form (i.e., /u/ cannot be assimilated to /i/ of a preceding syllable if that vowel, in turn, represents underlying /u/). - I do not think it is very interesting (in the present, rather floating state of linguistic formalization) to go into details about rule algebra; the remarks above will probably suffice to characterize what the rule does, and does not.

The rule works without any difficulties in most types of forms. But what about KF /aaquuniit/ 'or blood', /aniqḡuni/ 'going out', etc. without the expected change of /u/ (/uu/) into /i/ (/ii/)? Diachronically, these exceptions are due to constraints (c) and (b), respectively (see section 3.2, end), but synchronically it is most reasonable to speak of lexicalization: /aak/ is lexicalized as a base which fails to trigger the rule; /ḡu/ is lexicalized as a suffix which fails to undergo the rule unless it follows after a consonant stem (as in /siniḡḡini/ 'sleeping', cf. /sinik/ 'sleep'). In certain instances, however, the conditioning segment is synchronically transparent, cf. /aagḡuuq/ 'yes, it is said' from /aap/ 'yes', but it may also be more reasonable to posit lexicalization here than to operate with "bleeding" order between the rule of distant vowel assimilation and the rule of consonant assimilation. - In the framework of the dyad approach outlined in section 4.1, lexicalization would imply that dyads consisting of /aa(k)/ plus something else, and dyads consisting of a vowel stem plus /(ḡ)ḡu/, etc., are lexicalized only in variants with /u/ (in the appropriate position) as a continuation of etymological /u/.

The final question is: to what extent is etymological /u/, reflected as /i/, synchronically recoverable? Is it still transparent, in the majority of cases, that we have an alternation set which can be reduced to underlying /u/, or is it so that the majority of forms containing /i/ as a reflex of /u/ have undergone restructuring (so that one must now speak of invariant,



underlying = surfacing /i/? I shall briefly review the conditions in various positions.

(i) Etymological /u/ in a word initial syllable is always preserved.

(ii) Etymological /u/ in the initial syllable of a suffix may behave in three ways: (a) The vowel is preserved if the suffix itself is "irregular" or meets the structural description of some constraint on the vowel shift (examples in the KF dialect: /pu(q)/ 'indicative mood'; /kuluuq/ 'big'). -

(b) The vowel alternates if the suffix is subject to no constraint (numerous examples above). - (c) It is theoretically possible that the vowel may occur only as /i/ if the suffix occurs only after stems whose last syllable has /a/ or /i/, but I can think of no such examples.

(iii) Etymological /u/ in the final syllable of a bisyllabic or polysyllabic formative may behave in three ways: (a) The vowel may be preserved "irregularly" or by a constraint (cf. (ii,a) above with the example /kuluuq/). - (b) The vowel alternates as conditioned by the following formative (if the dialect has constraint (d) of section 3.2: /itøiir+puq/, /ittuur+tuq/). - (c) If a dialect does not at all make use of constraint (d) of section 3.2, formative final /u/ may be reflected consistently by /i/ (provided that none of the constraints (a), (b), (c) of section 3.2 apply within the formative).

(iv) Etymological /u/ in an internal syllable of a polysyllabic formative may behave in two ways: (a) The vowel may be preserved "irregularly" or by a constraint (examples: the second syllable of /puugutaq/ 'plate', /qipuqqaq/ 'humpback whale'). - (b) If there is no constraint on the shift of /u/ to /i/, the vowel occurs only as /i/ (example: /ikusik/ reflected as /ikisik/ 'elbow').

According to this taxonomy, there are three sets of conditions under which etymological /u/ may be reflected consistently as /i/, viz. (ii,c), (iii,c), (iv,b). The first of these is



entirely theoretical and will be disregarded here. The second may be exemplified by formatives such as /inuk/ 'human being' in a dialect which does not at all know constraint (d) (if such a dialect exists), i.e. a dialect in which /inuk/ has become /inik/, /inuttu<sup>r</sup>ttuq/ 'who eats human flesh' is /initti<sup>r</sup>tti<sup>r</sup>q/ or /init<sup>r</sup>ti<sup>r</sup>tt<sup>r</sup>iq/, etc. etc. I have at present no data for such a dialect; the Upernavik and East Greenland material that I have seen is suggestive of a sporadic use of the constraint in question, and I cannot decide whether there is any formative which never partakes in it. Moreover, even if there is such a formative, /i/ from /u/ will differ from etymological /i/ in that there occurs a labial glide between this vowel and the initial vowel of a following formative (unless that vowel is /u/ → /i/): even if the second syllable of /inik/ is always /i/, the possessive form /ini<sup>v</sup>a/ 'its occupant' and the plural /ini<sup>v</sup>it/ 'human beings' betray the specific status of /i/ (as against /panik/ 'daughter', /pani<sup>j</sup>a/ 'his daughter', /paniit/ 'daughters'). In that case one may claim that a formative with etymological /u/ is restructured with /i/ plus a labial glide, e.g. that /inuk/ is restructured as underlying /ini<sup>v</sup>k/, whose labial appears on the surface if the final consonant is deleted before a suffix vowel. However, this solution introduces an underlying representation which is never surfacing in the southern dialects of modern WG. Since the surface forms would be just as predictable from underlying /inuk/, I see no compelling reason to speak of restructuring. (There is a further criterion in West Greenlandic dialects showing that /i/ from /u/ remains functionally different from etymological /i/: if the former occurs before a suffix initial /u/, and the two together are shifted, we get a long vowel /ii/, cf. /qişuk+uşa<sup>r</sup>q/ 'resembling wood' reflected as /qisiisaq/, whereas etymological /i/ plus suffix initial /u/ are reflected in many cases as bi-syllabic /i<sup>j</sup>i/ or /i-i/, cf. /malissavi<sup>j</sup>uk/ 'are you going to



follow him', KF /malissavi<sup>j</sup>ik/.) - It must be repeated that this situation is hypothetical, given the data that I have examined.

There remains just one genuine possibility of restructuring of etymological /u/ to /i/, viz. if the vowel occurs in a formative internal syllable (condition (iv,b)). In the southernmost dialects of West Greenland forms such as /ikisik/ 'elbow', /asiki<sup>j</sup>aq/ (from /asuki<sup>j</sup>aq/) 'I do not know' may have entire restructuring. In other dialects, however, the "history" of /i/ may be betrayed by a more or less optional retention of the labiality feature of etymological /u/ in the form of a labialization of the following consonant or consonant cluster. I think it is extremely likely that such labialization used to occur in the southern dialects as well.

To sum up: it is only in syllables that are neither immediately preceded nor immediately followed by a formative boundary that there is no possible alternation of /i/ (from /u/) with a rounded vowel, or a cluster consisting of a vowel plus a labial glide, to betray the special status of /i/. In most forms the underlying feature of rounding is recoverable. Hence, the phenomenon of "i-dialect" invites a generative treatment in terms of rules. Since these rules are essentially correspondence rules between the standard language and "i-dialect", they may be used e.g. for pedagogical purposes, if there is any need for that.

It is an interesting question to what extent the alternation patterns betraying the origin of the changed vowel are mastered actively by speakers of "i-dialect". There is a specific issue which has not been touched upon in this paper: to what extent are these alternations employed in transforming dialect forms into standard WG, e.g. in writing? Investigations of errors in forms with recoverable versus irrecoverable etymological /u/ may throw light upon this question.



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