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DOCTORAL DISSERTATION – ABSTRACT

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SUPRASEGMENTAL SOUND CHANGES IN THE SCANDINAVIAN LANGUAGES

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The subject, structure and aims of the thesis

The thesis investigates the changes that have occurred to the phonologically relevant prosodic features in the three central Scandinavian languages. Quantity, stress and tone are distinctive at the level of the word in Norwegian and Swedish, while in Danish it is quantity, stress and the glottal feature of stød that are lexical. The members of the tonal opposition in Sw&No are known as Accents 1 and 2. The distribution of Accent 1 and stød (just like Accent 2 and lack of stød) exhibit striking similarities, which makes it clear that the two phenomena go back to a common source.

The prosodic problems in question have been treated exhaustively in the phonological literature. Yet the different use of certain premises and a number of terminological problems have led to a state of affairs where prominent authors advocate completely divergent positions. Accordingly, the first chapter of the thesis is dedicated to some theoretical questions, whose conclusions can facilitate the discussion of contemporary prosodic matters in Chapter 2, which in turn is meant to serve as a ground for certain aspects of the diachronic review in Chapter 3. Chapter 4 provides a summary of the main findings of the previous chapters.

The theoretical framework

A large number of sound changes appear to make sense as they either 1) result in a more economical inventory, 2) decrease articulatory effort or 3) minimize perceptual confusion. We can thus assume that such changes optimize the system within which they take place and therefore can be described as goal-oriented processes. These observations about sound change form the basis of an approach known as Functional Phonology.

Given that phonological change is rooted in language use, I argue that it reflects a typical communicative situation, which requires an addresser, an addressee and a code between the two. Optimal communication requires a code that is easy to articulate, easy to perceive and easy to learn. These three factors, which are to a certain degree inherently in conflict, can be translated to the three functional principles in 1.4.3. If a sound change is the product of these internal factors, then it satisfies at least two out of our three principles. If a sound change cannot be described in terms of optimization, then it is due to language contact / external factors (1.5.3).

As far as I see, the criticism directed at the functional approach can be met with convincing arguments. It is often maintained that reliance on teleology (goal-orientedness) is unscientific. In 1.2.2 I claim that the mechanistic / deductive model of science is not applicable to the human sciences (which include linguistics) as the investigation of human phenomena is qualitatively different from the investigation of physical reality. This means that the only possible explanation left at our disposal involves teleology. I assume that sound change (similarly to Darwinian evolution) is made up of incessant random variation and meaningful selection (1.4.5.3). We can use goal-orientatedness (as a heuristic tool) to describe the latter (1.2.1).

The functional principle that reflects the perspective of the speaker (ease of articulation) is usually expressed with a reference to markedness relations. It has been pointed out that the notion of markedness is charac-
terized by an embarrassing degree of polysemy and is as such an unscientific, snowball-like concept, which leads to contradictory claims. Although this is a valid point, the solution to this problem is not to banish the term for good, but to come up with a workable definition. I argue that a frequency-based approach to markedness is superior to a definition based on complexity (1.3.3). This practice assigns a completely new interpretation to the markedness relations of privative oppositions.

The last critical point concerns the belief that phonological change improves the system. How is it possible that inventories keep on changing forever instead of arriving at an optimal system after a time? It turns out that there is no optimal system. The discrepancy between an optimal (i.e. symmetrical) inventory and the shape of our speech organs and the irreconcilable perspectives of the listener and the speaker make it clear that there is no ideal system. The fact that it is always possible to find a better one implies that phonological changes driven by internal factors always form a loop, which allows for eternal optimization (1.4.5.2). The problem of mergers seems also incompatible with the concept of improvement, since two merging sounds often result in homophones and thus increase rather than decrease perceptual confusion. Most mergers, however, lead only to pseudo-homophones, which are never confused (1.4.5.4).

The final section of chapter 1 demonstrates how our functional principles can be applied to some vocalic changes that occurred in Old English (1.5.1) and how these very same principles can pinpoint foreign influence in historical linguistics once we have established the basic types of phonic interference (1.5.4). I identify a vocalic development in Old English, which, I claim, is due to Scandinavian influence (1.5.5). It is also shown how changes in stress placement can form a loop of eternal optimization (1.5.2).

**Synchronic analyses**
The considerable overlap that exists between the phonology of Swedish and Norwegian (2.1), allows us to present the two languages together. Both exhibit complementary quantity in stressed syllables, which accordingly either have V:(C) or VC: rhymes. I provide phonetic, derivational and distributional evidence (2.2.2) for the assumption that the UR includes vocalic quantity.

The stress pattern (by which I mean the location of primary stress) of modern Sw&No is to a large extent unpredictable. I argue that it is pointless to set up derivational rules for the stress pattern of mono-morphemic words. I challenge the view the Sw&No are right-aligned languages with a three-syllable window and propose that these languages still have default initial stress. The fact that Sw&No stress (almost) always falls on one of the three last syllables of a word is a static generalization, a distributional accident, which cannot weigh as much as the directionality of analogical processes (2.2.3).

The tonal contrast in Sw&No can be analyzed either as equipollent or as privative. I adopt the latter approach arguing that it is more appropriate for the purposes of a phonological study (2.2.4.1). I distinguish between maximal and minimal systems and assume that the opposition is not preserved in non-focal position in minimal systems (2.2.4.2). Although the tonal distinction is only marginally distinctive I reject a recent proposal according
Given that a stressed Danish syllable is not subject to the bimoraic requirement, Danish quantity is more of a segmental than a prosodic feature. Long consonants are only found across grammatical boundaries or as a result of schwa-assimilation. I argue that a moraic analysis is not adequate for short consonants and reject therefore the claim that the mora is a unit of quantity for vowels but not for consonants (2.3.1).

I assume that lexical stress is a binary category, while a surface-phonological description includes three levels in all three languages. The fact that a syllable loses its stød if it appears under tertiary stress as a result of stress demotion echoes our claims in 2.2.4.2 that the tonal contrast is not realized in non-focal position (2.3.2.1). I also propose that contemporary Danish lacks default stress in contrast to Sw&No (2.3.2.2).

The way we defined phonological markedness (1.3) points out stød as the unmarked member of the opposition. The distribution of stød in inflected forms indicates that most regularities are tied to morphology and that a strictly phonological approach involves unnecessary complications and way too abstract underlying forms (2.3.3.1). The unmarked status of stød can also be supported with some ongoing changes as a large number of words have acquired stød in recent years (2.3.3.2). While stød is often lost on the anterior constituents of compounds, posterior constituents frequently host lexically unmotivated tokens of stød. I argue that this phenomenon has physiological and morphological reasons (2.3.3.3). As for the functions of the opposition, I assume that the unmarked pattern (stød) is associated with [+native] similarly to Accent 2 in the tonal dialects (2.3.3.4).
A diachronic reconstruction
I argue that the Proto-Germanic stress shift originally resulted in word-initial (rather root-initial) stress and that it is unlikely to have preceded Grimm’s law (3.1.1).

Given that the modern Scandinavian languages exhibit fully productive compounding but lack dynamic stress shifts, I reject the idea that they have right-aligned stress and that they obey the three-syllable-rule of modern Greek, Italian etc. A comparison between those languages in which the rule is said to apply reveals that they do not implement the three-syllable-rule in a uniform fashion. If we want to insist that e.g. Swedish follows the rule, then we can conclude that it follows its weakest possible interpretation, given that it only applies to stems and derivatives, which is probably a distributional accident and not an underlying principle (3.1.2).

Although final stress in compounds is a sporadic feature in the modern languages, it used to be much more extensive. I propose that the phenomenon emerged in connection with level stress, i.e. before the Scandinavian quantity shift, and that it was productive for centuries to follow (3.1.3). In 3.1.4 I raise concerns about the widely held belief that a Germanic content word is always heavy and argue that CVC-monosyllables are monomoraic. I point out that moraic analyses of short consonants are arbitrary and often rely on false premises, which can lead to contradictions.

Although open syllable lengthening is expected to feature only V lengthening, it also involves gemination in certain dialects, which is argued to be due to Sámi influence. This supposition can be mapped onto the basic interference types we outlined in 1.5.4 and is both supported by the facts of dialect geography and the sound pattern of the Finnic languages, which display both C-gradation and geminates (3.1.5).

Danish has a syllable cut opposition similarly to English, German and Dutch so I argue that from a prosodic point of view it is a West-Germanic language. I demonstrate that degemination is the result of an incomplete transition into a system of complementary quantity. Furthermore, I argue that (a transition into) a σ cut opposition is incomprehensible in terms of moras (3.1.6).

Given that F0 is a usual stress correlate I assume that a phonetically tenable account of tonogenesis has to trace the opposition back to various stress patterns. Accordingly, the origins of the tonal contrast either go back to secondary stress in Proto-Nordic or level stress in Old Scandinavian. The former approach singles out two-peaked dialects (like that of Stockholm) as conservative varieties. Nevertheless, it is not viable to assume identical tonal building blocks for the early opposition and modern two-peaked dialects. Although the tonal opposition is commonly attributed to epenthesis and cliticization in the 11th and 12th centuries I suggest that the reductions of the Syncope Period gave rise to a cursory tonal contrast. It is argued that the retention of the tonal curve after stress demotion is due to Sámi influence (3.2.1).

According to the level stress approach, in which the opposition is assumed to have originated as HL:LHL, open syllable lengthening in the 13th and 14th centuries can be said to have been the immediate trigger of tonogenesis. Given that this hypothesis attributes the present-day distribution of Accent 2 to analogy even in such cases that are incompatible with our understanding of
analogical processes (3.2.4) it seems clearly inferior to the Proto-Nordic approach. This stance is corroborated by the assumption that the glottal opposition goes back to a tonal predecessor and emerged due to V weakening in the 13th century (3.2.2).

The extensive phonetic variation of the contemporary tonal typology is argued to be due to the mechanism of peak delay (i.e. rightward shifts). The tonal shifts are functionally motivated and form a loop of eternal optimization (3.2.3). Although the Stockholm variety is supposed to represent the original state of affairs, the city of Stockholm itself is claimed to have escaped the loop since the tonal contrast was possibly suspended for a century or so given that Accent 2 was generalized in the area due to language contact. I propose that some dialects that have general Accent 1 today must have passed through an earlier stage with generalized Accent 2 (3.2.4).

The thesis is concluded with a glance at some current developments in multiethnic urban environments (3.3). The newly arisen multiethnolects / sociolects display similar tendencies in the three languages. They all exhibit a staccato-like rhythm and a considerably weakened (yet not completely lost) tonal/glottal opposition. While earlier contact with speakers of other Germanic dialects contributed to the spread of phonologically unmarked features (3.2.4), the present-day situation, when Scandinavians have come into contact with an unprecedented number of people speaking linguistically distant non-Germanic languages, has led to the advance of phonetically unmarked features such as non-stød and Accent 1. Some supraregional similarities observed in Swedish multiethnolects suggest that the tonal opposition is on the way to be neutralised in Accent 1.

Some major claims of the thesis
1. Phonological markedness is based on frequency.
2. If a sound change cannot be described in terms of optimization, it is due to foreign influence.
3. Underlying quantity is restricted to vowels in modern Scandinavian.
4. Initial stress is still default in Sw&No but not in Danish.
5. The tonal / glottal opposition can only be realized in focal position.
6. The building blocks of the word accents are not uniform throughout the continuum.
7. Lexical Phonology, OT and the distribution of the accents all point to the marked status of Accent 1.
8. A short word-final C cannot be moraic.
9. Germanic degemination upon vocalic lengthening was due to short stressed syllables.
10. Secondary stress in common Scandinavian was preserved as Accent 2 due to Sami influence.
11. The members of a prosodic opposition change in tandem.
12. Danish stød goes back to a tonal opposition and results from reductions.
13. Peak-delay is responsible for the tonal typology but not for tonogenesis.
14. Generalised Accent 1 goes back to generalized Accent 2 (triggered by language contact).
15. The prosody of urban multiethnolects in Scandinavia exhibits supraregional correspondences.