

## CAN FUNCTIONAL LOAD EXPLAIN SOME DANISH SOUND DEVELOPMENTS?

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The concept of functional load as an operating cause in sound change has not been accepted everywhere, and can indeed, I believe, only be one of the very seldom operating causes and, I think, its usefulness will depend upon its explanatory power.

The Old Danish system of post-vocalic stops is generally considered to be as follows:

(1)	/p/	-pp (-)	/t/	-tt (-)	/k/	-kk (-)
		-p (-)		-t (-)		-k (-)
	/b/	-bb (-)	/d/	-dd (-)	/g/	-gg (-)
		-β (-)		-ð (-)		-γ (-)

which may be analysed as having a length opposition (which all Old Danish consonants had) and an opposition of voice where the short voiced members were realised as fricatives.

This system was radically changed by the Danish lenition which turned the fricatives into vowels or zero, the voiceless stops into voiced stops or fricatives, and shortened the long consonants. We are able, in medieval Danish manuscripts, to follow this development step by step, and the Danish dialects of today also show the steps of this development.

Disregarding minor geographical differences, the systems of the three Danish main dialects of today are as follows:

Eastern Danish (including what is now part of Sweden):

(2)	-pp (-)	-tt (-)	-kk (-)
	-b (-)	-d (-)	-g (-)
	-bb (-)	-dd (-)	-gg (-)
	—	—	—

Island Danish (here the lenition is so strong that the original short voiceless stops also became vowels or zero):

(3)	-p (-)	-t (-)	-k (-)
	—	—	—
	—	—	—
	—	—	—

Western Danish:

(4)	-p (-)	-t (-)	-k (-)
	-v (-)	-ð (-)	-γ (-)
	—	—	—
	—	—	—

It will be seen that the long voiced stops have disappeared in Island Danish and Western Danish, although there seems to be no reason for this. The development which might have been expected, is for Western Danish the following:

(5)	-p (-)	-t (-)	-k (-)
	-v (-)	-ð (-)	-γ (-)
	*-b (-)	*-d (-)	*-g (-)

and for Island Danish:

(6a)	-p (-)	-t (-)	-k (-)
	*-b (-)	*-d (-)	*-g (-)

or rather:

(6b)	-ph	-th	-kh
	*-b̥	*-d̥	*-g̥

But what has happened to the Old Danish words containing postvocalic *bb-dd-gg*?

Although I again disregard minor geographical differences, the description will be rather complicated. Starting from the west this time, in the western part of Jutland, there is different development of word-final and word-medial *pp* and *kk*, and most of the words with word-final *-bb*, *-gg* follow word-medial *-pp*, *-kk*— and word-medial *-bb*, *-gg*— follow *p, k*, but some words always follow *p, k*. Not so with *dd*, where a few words follow *t* but most of them *ð*.

The situation is otherwise in the eastern part of Jutland: here all *bb, dd, gg* follow original *p, t, k* in their further development.

In Island Danish again they merge with *pp, tt* and *kk*.

In Eastern Danish again the system is, as mentioned, upheld, except for the island of Bornholm which has this curious development:

(7)	<i>pp</i>	<i>tt</i>	<i>kk</i>
	<i>v</i>	} <i>ð</i>	<i>g</i>
	<i>bb</i>		<i>gg</i>
	—	—	—

Now words containing *bb*, *dd*, *gg* were very scarce in Old Danish. Less than ten minimal pairs with opposition to *pp*, *tt*, *kk* can be found. Many of the words have since disappeared, others have nowadays a very restricted geographical use. In some dialects, for instance, you find less than five words which originally had *bb*. Most frequent was in Old Danish *dd* which was found in the preterite and participle of two verbal conjugations.

If we now posit that, because of the very low functional load of one of the members of a phonological system, this system MIGHT at any time in its historical development break-down, but didn't NECESSARILY do so, and that the members of the disappearing series would merge with one or anyone of the remaining ones, what is described below will occur.

If the break-down took place before the lenition, there would remain three (or four) other members with which to merge. This is what happened in WESTERN JUTLAND. If the break-down took place after the first step of the lenition (where old fricatives disappeared), there would remain two members with which to merge and the most likely one would be the most affiliated, namely the voiced one. This is what happened in EASTERN JUTLAND. If again the break-down didn't take place until after the lenition was fulfilled there would be only one member with which to merge. This is what happened in ISLAND DANISH.

To fulfill the description, the one with the highest functional load —*dd* in a few areas namely the eastern part of Funen and the southern part of Jutland, resisted the tendency to merge, and showed independent development, to *jt* and *jr*.

It might be added that the scarce information on this point from older Danish manuscripts and loan-words doesn't contradict this hypothesis, but rather supports it.

The reason why this description will appeal to a Dane, is that it shows a historical and geographical movement from the west to the east, beginning in Western Jutland about the twelfth century, through eastern Jutland reaching the islands about 1500 and just now starting in Eastern Danish on the island of Bornholm. This is a route very well known to Danish language historians, who are well acquainted with the fact that Western Jutlandish, since the early Middle Ages, has been a radically changing dialect which gradually influenced the other dialects until the authorised Danish written standard language during the eighteenth century slowly got the overhand.

The development of the Old Danish long voiced stops might then possibly be taken as a point in favour of the usefulness of the concept of functional load in historical linguistics.

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## DISCUSSION

GARNES (Columbus, Ohio)

You state that the *dd* cluster had a greater functional load because of its frequency in verbal conjugations. Does the split of the subsequent sound change to *ð* and *t* occur according to grammatical categories?

RINGGAARD

No. The greater functional load due to the morphological use only made it possible for *dd* to resist the tendency to merger in a few areas.

HAUDRICOURT (Paris)

Le "functional load", est-ce le rendement de l'opposition ou bien la fréquence d'emploi?

RINGGAARD

There is no agreement on this point, which is a weakness. In diachronics you are restricted to counting lexical words and guesswork as to frequency of use.

LEHISTE (Columbus, Ohio)

I would like to ask how these sound developments are related to the loss of the quantity opposition. It is possible that they might provide some evidence as to when this loss took place.

RINGGAARD

I do not think there is any direct relation. But by the evidence of relative chronology we may be able to fix one of them by the other one.