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The changes in Scandinavian morphology from 1100 to 1500

1. Introduction

This article analyses the morphological changes from classical Old Norse into Modern Norwegian[1]. Some parallels will also be drawn to Swedish and Danish. We will look at how the morphology changes, and why it changes, in the first half of the second millennium AD, or from the period of the earliest texts to the end of the Norwegian written tradition. The data are taken from Mørck (ms.), but his main sources are the standard reference works of Indrebø, Seip, Wessén and Skautrup (cf. the literature list for exact references). The goal of the present article is to present an attempt at analysing the mechanisms behind the change.

It will be argued that the reason for the breakdown of the person-number agreement and case system were not primarily phonological, but that they rather must be sought from within the inflectional system itself[2]. Changes in the system of declension classes and in the rule-system created paradigms that were open for large-scale reanalysis, and thus had far-reaching consequences. The transition period in itself was quite rapid, and extended probably over no more than three generations, a pattern that is well known both from dialect shift and from language death today.

The theoretical framework of this article is Lexeme-Based Morphology, as presented in Matthews 1972 and developed by Anderson, Beard,

[1] This article grew out of a joint course on this topic that I held together with Endre Mørck at the University of Tromsø in spring 1999. Without Endre's empirical work this article could not have been written. Thanks are also due both to Endre and to the students for continuous discussions of my analyses, and to Hans Olav Enger, Eldar Heide, Tore Nesset, and an anonymous ANF reviewer for valuable comments to the article. The usual disclaimers apply.

[2] Internal factors as reasons for the breakdown of the Case system has been mentioned by scholars working outside the neogrammarian tradition, e.g. by Hansen 1956: 192. Cf. the discussion in sect. 5.

Carstairs(-McCarthy), Plank, Stump, Zwicky and others. I will also draw on insights from work within non-autonomous linguistics, such as work by Bybee. Readers familiar with this framework may thus skip section 2 and proceed to section 3, a short introduction to the language situation prior to the change. The following three sections present and analyse the verbal, pronominal and nominal inflectional systems (the adjectives are not treated). Finally comes a conclusion.

2. Theoretical preliminaries

2.1. Paradigm structure

By the morphological (inflectional) paradigm of a lexeme L, I will, following both classical grammatical and the lexeme-based tradition, understand the full set of pairs of word-forms and morphosyntactic (grammatical) words expressing all morphosyntactic properties of each of the morphosyntactic (grammatical) categories of L.

In his analyses of paradigm structure, Kenneth Pike (Pike 1963, 1965) makes a fundamental distinction between simple and ideal matrices. In a simple matrix, each morphosyntactic property is expressed by one exponent, and combinations of morphosyntactic properties simply equal combinations of exponents. Given two morphosyntactic categories, M and N, with m and n properties each (3 cases and 2 numbers, say), the total number of exponents will be m + n, 3+2=5 in the example below (the set {x, y, z, a, b}). An ideal matrix, in Pike's terms, will give a unique formative for each combination of properties, and the total number of exponents will be m x n, or 6 in the example below (the set { a, b, c, d, e, f}). We immediately recognise the two types as representing a Turkish and a Latin type of inflection, agglutinative and fusional, respectively.

	N1	N2
M1	xa	xb
M2	ya	yb
M3	za	zb

N1	N2
a	d
b	e
c	f

Table 1. Simple matrix (left) and ideal matrix (right)

In real life, languages do not belong squarely in only one of these two camps. Old Norse, and in general, the Germanic languages, have paradigms with elements of the ideal type. The ideal type is not the only deviation from the simple type, though. As Carstairs 1987 has shown, there are 4 and only 4 ways of deviating from the axiomatic 1-to-1 matching of content and form we find in the morpheme model:

> **Deviation I: One property to many exponents syntagmatically**
> Extended exponence, the same property is represented several times within the same word form. (e.g. German participles: 'to go': gehen – **gegangen**)
> **Deviation II: One property to many exponents paradigmatically**
> Lexically or grammatically conditioned allomorphy (e.g. English Plural suffixes)
> **Deviation III: Many properties to one exponent syntagmatically**
> Cumulative exponence: in the same word-form more than one morphosyntactic property is realised in one unsegmentable morph (e.g. Latin Plural case forms)
> **Deviation IV: Many properties to one exponent paradigmatically**
> Homonymy within inflectional paradigms.

In the analysis to follow, I will see the paradigmatic changes as a result of the deviations listed here, concentrating upon the interrelation between deviations II through IV.

2.2. Dominance

Following Carstairs 1987 and ultimately Hjelmslev 1935, I will refer to a certain dependency relation between the exponents of distinct morphosyntactic categories as an instance of *dominance*[3], in the following sense. (op.cit. p. 107–108):

> L'interdépendance entre les catégories est un fait de *domination*. Dans un système grammatical, certaines catégories sont dominantes et certaines autres catégories sont dominées, ces termes entendus dans un sens relatif. [...] La domination consiste en ceci que *la catégorie dominée engage des syncrétismes sous la pression de la catégorie dominante*. [Hjelmslev's italics].

Thus, in Latin, Number dominates Case, since Case syncretism occurs when the word form in question expresses certain values of Number

[3] A recent use of the same idea can be found in Brown 1998.

(Plural). In Finnish, it is the other way round. Here, the Number distinction is abolished in the Comitative and Instructive cases, thus, Case dominates Number. Cf. the paradigms (only half of the Finnish cases are shown):

	Sg	Pl
Nominative	manus	manu:s
Accusative	manum	manu:s
Ablative	manu:	manibus
Dative	manui:	manibus
Genitive	manu:s	manuum

	Sg	Pl
Nominative	käsi	kädet
Genitive	käden	käsien
Partitive	kättä	käsiä
Essive	kätenä	käsina
...	...	...
Abessive	kädettä	käsittä
Comitative	käsin	käsin
Instructive	käsine	käsine

Table 2. Latin and Finnish case-number paradigms

2.3. Relevance

According to Joan Bybee (Bybee 1985), Morphosyntactic categories may be ordered on a hierarchy, where the ordering principle is **relevant to the referent of the lexeme**. This hierarchy governs the internal order of exponents for Morphosyntactic Properties within a word-form, in the following way:

(1) The exponents of more relevant categories are situated closer to the root than the exponents of less relevant categories

Thus, for a language with suffixation as its morphological process, we should expect word-forms like these ones (prefixing languages will be the mirror image of the strings below):

(2) Verbs: root – aspect – tense – mood – person
Nouns: root – number – case

Other linguists have utilised Bybee's hierarchies for other purposes than ordering of strings of exponents. In our analyses of Scandinavian we will also do that, in particular, we will follow Carstairs 1987 and link relevance and dominance.

2.4. The rule component

In lexeme-based morphology (as presented in Matthews 1972), morphology is seen as a mapping of morphosyntactic representation to wordform via morpholexical rules. Several notational versions of this rule format exist; Laurie Bauer's notational variant (Bauer 1988) is convenient for expository purposes. Cf. Table 3:

B	**Base**	Input form
L	Limitation	The bases that are allowed to undergo this rule
P	Process	Morphological process
R	**Reference**	The morphosyntactic word that corresponds to the output
	Output	Output form

Table 3. Rule format for morpholexical rules, according to Bauer 1988

As can be seen from the table, each rule consists of five parts. Of these, the Limitation and the Process may be empty, in other words, there may be no limitations on the Base, and no morphological process need to be invoked (as compared to the zero allomorphs and morphemes of different structuralist theories).

To briefly illustrate how the mechanism works, consider the following two morphological processes, both from German:

P_i add formative *-er*
P_j Umlaut: *<a, o, u, au>* ⇒ *<ä, ö, ü, äu>*

We then take a neuter stem (*Schloß*, 'castle') and an adjective (*schön*, 'beautiful') as examples, going from the Base to Nominative Plural *Schlösser*, and from the base to comparative *schöner*. This will in Bauer's format look like this:

B	*Schloß*	*schön*
L	belongs to declension class D_l	belongs to declension class D_m
P	P_i, P_j	P_i
R	Plural Nominative of lexeme *Schloß*	comparative of lexeme *schön*
O	*Schlösser*	*schöner*

Table 4. Morpholexical rules (Rules of exponence) for German

Following Zwicky 1985, I will distinguish between two types of morpholexical rules, rules of exponence (exemplified above) and rules of referral. Rules of exponence have a fixed morphological process in their Process field; thus, an input form will undergo this process in order to match the Reference component. Rules of referral differ from rules of exponence in that they have a pointer to a rule of exponence in their Process field. The philosophy is as follows: "In this particular case we will do whatever the rule that we have referred to does".

As can be seen from the example, the same morphological processes (here P_i) are used in different contexts for different rules of exponence. This formalism is too strong, and thus subject to Lyons's classical criticism of the standard theory of Chomsky 1965, as presented in Lyons 1968: 331 (the formalism allows us to write absurd rules of the type NP -> V VP). The formalism presented here overgenerates in the same way as we know it from the standard theory. A primary task for morphological theory is thus to search for constraints on exponential rules[4]. Although we will focus on changes in paradigm structure, we will return to this issue in the next subsection.

When it comes to the internal ordering of morpholexical rules I will follow Zwicky in his use of the Elsewhere Condition (Zwicky 1985). Thus, rules with more specific Limitation field take precedence over (and block) rules with less specific Limitation fields.

2.5. Paradigm structure and homonymy

In this article our main task is to look at the conditions for change from one paradigm to another. The changes we will see from Old Norse to Early Modern Scandinavian will mostly be merger of formerly distinct forms, and we will thus be occupied with Carstairs' Deviation IV, homonymy within paradigms. We will also look at when homonymy turns into neutralisation. This does not mean that we leave the problem of overgenerating forms. To the contrary, the main factor preventing overgeneration of forms by too powerful rules is probably the set of restrictions upon paradigm structure.

We start our discussion with a definition of homonymy, and a discussion of the distinction between homonymy and neutralisation, and we

[4] A recent alternative to the present approach can be found within Optimality Theory: To let different candidates compete according to a set of ranked constraints. Until now, Optimality Theory has mainly been tested upon phonological, partly also phonological data, and we will not evaluate such an option here.

take as our starting point a distinction made in the Praguian structuralist tradition, here stated by Trnka 1958:

> The neutralisation of morphological oppositions must be kept strictly apart from homonymy. [...] Homonymy [is] the identity of the phonemic realisation of a morphological opposition. Neutralisation [is] the suppression, under non-phonological conditions, of a morphological opposition

In this work I will not follow Trnka directly. Since we are about to establish what formal identity is morphologically conditioned, and what is phonologically conditioned, we would not like this to be a part of our definition. Rather, we will distinguish homonymy (all cases of formal identity) from neutralisation (the lack of distinction between the morphosyntactic features a_i and a_j (both belonging to the morphosyntactic category a) in the context of the morphosyntactic feature b_i (belonging to the morphosyntactic category b)). As an example, cf. the following paradigm of Norwegian adjectives:

	Sg			Pl		
	m	f	n	m	f	n
indef	fin	fin	fint	fine	fine	fine
def	fine	fine	fine	fine	fine	fine

Table 5. Norwegian adjectives

Here the indef Sg m/f *fin* is not a case of neutralisation (in the sense of Trnka cited above), since the Gender distinction is upheld in this context, between neuter and masculine/feminine. For Plural and Definite, however, the Gender distinction is neutralised, and Definiteness is neutralised for Plural and Number for Definite.

Summing up, we call all formal identity homonymy, but as soon as a full Morphosyntactic Category is missing in the context of a certain property of another Category, we will call the homonymy in question neutralisation (this concept has an obvious parallel in phonological theory). All neutralisation is thus homonymy, but not vice versa.

3. Scandinavian diachronic morphology 1100–1500

From a common starting point in Common Scandinavian (the period prior to the first written sources falls outside the scope of this article), we may follow three parallel paths towards AD 1500, with the Danes in the lead and the Swedes and Norwegians somewhat more conservative. We will concentrate upon three parts of speech: verbs, nouns and pronouns. The verbal morphology changes in two steps. In the first one, falling within our period, the person agreement is lost in most dialects. In the second step, number agreement disappears from most of the dialects. For Norwegian and Swedish, this happens after the period discussed here[5]. Pronouns go from a 4-case system to a 2-case nom-acc system, whereas the nominal system changes in two steps. First, the Genitive suffix is reanalysed as a clitic, and disappears from the system, and thereafter, the three remaining cases are merged during a short transition period.

I will document the factual changes, with data drawn mostly from the literature available: Seip 1955, Indrebø 1951, Wessén 1958a,b and Skautrup 1944, 1947 are the main sources for Norwegian, Swedish and Danish, they are summarised in Mørck ms. These works have been completed by some special studies (e.g. Knudsen 1967, Enger 1991, Hansen 1956 and Ringgård 1991), but in general there has been little explicit research on this process.

4. The verbal system

As a starting point for the analysis, we analyse the morphosyntactic categories Tense, Number and Mood as privative categories, categories with value or non-value:

(3) Tense: Present, Past
Number: Singular, Plural
Mood: Indicative, subjunctive

The rules that we will pose are either rules of exponence or rules of

[5] The development is briefly mentioned in the standard surveys. A special study confirming the late loss of Number agreement in Swedish is Larsson 1988. Some conservative dialects (the most well-known case being Älvdalsmålet, cf. Levander 1909) keep the old system.

referral. If the Reference part of several rules of exponence do not overlap, we generate either an ideal or a simple paradigm. In case of certain unique forms among many homonymous forms it may be more appropriate to let the reference and/or the limitation part of several rules of exponence partly overlap. In the case of overlapping reference or limitation, the most specific case will win, according to the Elsewhere Condition. Thus, rather than listing every English weak verb in the limitation component of the rule, one may state that the rule `add -d` applies to all English verbs. Then one may list the strong verbs one by one, and let the Elsewhere Condition block the application of the general rule, to avoid forms like *he wroted the letter yesterday*.

We will see choice of rule types throughout the period as diagnostic of language change. We consider 4 different types of cases:

a) Rules of exponence: Each exponent has its rule
b) Rules of referral: a rule refers to some other rule
c) Rule interaction obeying the Elsewhere condition
d) Neutralisation via underspecification

For each of the 4 cases, homonymy is a possible outcome. But the way of achieving homonymy is different for the 4 cases, and the process towards total neutralisation may be seen as a stepwise move from a. to d.:

a) Rules of exponence: Identity is accidental
b) Rules of referral: co-variation, no longer independent realisation of cells
c) Rule and the Elsewhere condition: The whole paradigmatic space is covered by the general rules, the special rules give exceptions, but these rules may be excluded without affecting the system in any way.
d) Neutralisation: The special rules vanish from the system.

For the sake of brevity, the rule format used here deviates from Bauer's exposition presented above. The format should be transparent, though. Thus, the rule that we will write

```
Pres sg Ind <Mod> : { 1:ID, 2:-t, 3:ID }
```

may in Bauer's notation be written

B	L	P	R
Stem	Modal		[1sg pres ind]
Stem	Modal	add -t	[2sg pres ind]
Stem	Modal		[3sg pres ind]

The abbreviated format writes "ID" for "do not apply any morphological process", i.e. for the identity operation. If the Limitation component is empty, it will be left out.

4.1 The paradigms

This section presents the paradigms for four different stages of Norwegian, and for Old Danish and Early 16th century Danish. The development of Swedish and Norwegian are by no means identical, but they are similar enough to look into only one of them. The four stages of Norwegian are Old Norse (marked "ON" in the tables), 13th/14th century (No 13/14), and early 15th and 16th century Norwegian (marked No E15 and No E16, respectively). This gives us 3 different transition periods, and we arbitrarily number them with the Roman numerals I, II and III. In the text, the paradigms are presented as the discussion proceeds, full paradigms can be found in the Appendix.

4.1.1. Old Norse

In all the tables below are given the Old Norse verbal suffixes for strong verbs (St.), ja-verbs (ja), modal verbs (Mod.), ia/ē-verbs (ia/ē-) and ō-verbs (ō). Homonymy is marked by absence of borders between the cells.

We start out with the Present Singular forms of Old Norse.

ON		St.	ja	Mod.	ia/ē	ō
	1.	-	-	-	-i	-a
pres Sg	2.	-r/-	-r/-	-t	-ir	-ar
	3.	-r/-	-r/-	-	-ir	-ar

Table 6. Old Norse Present Singular

In the Present Singular, 2 of the 3 forms are identical. This may be analysed in 3 different ways: by rules of exponence, by rules of referral, or by overlapping rules.

The set of rules of exponence in (4) generates the attested Present Singular forms:

(4)
```
Pres sg <Mod> : { 1:ID, 2:-t, 3:ID }
Pres sg <St/ja> : { 1:ID, 2:-r, 3:-r }
Pres sg <ia/ē> : { 1:-i, 2:-ir, 3:-ir }
Pres sg <ō> : { 1:-a, 2:-ar, 3:-ar }
```

This approach gives explicit rules for each cell of the paradigm. Thus, the fact that the 1sg and 3sg Present forms are homonym for the modal verbs, whereas the 2sg and 3sg Present forms are identical for all the other paradigms is simply overlooked. Each of the three persons gets its own rule.

The same data can also be accounted for by rules of referral:

(5)
```
Pres sg <Mod> : { 1:3, 2:-t, 3:ID }
Pres sg <St/ja> : { 1:ID, 2:3, 3:-r }
Pres sg <ia/ē> : { 1:-i, 2:3, 3: -ir }
Pres sg <ō> : { 1:-a, 2:3, 3:-ar }
```

Here, the rules for 1st and 3nd person (Modal verbs: 2nd and 3rd person) are identical to the ones in (4), but the duplicated rules of (4) are here replaced by rules referring to other exponential rules. Thus, the different verb classes all have different rules for 3rd person, but all except the modal verbs have the same rule for 2nd person: "the word-form expressing 2nd person is generated in whatever way the 3rd person form is generated", or "2:3" in the notational convention used here. The direction of the rule is not always obvious. The choice of direction is synchronically motivated, by letting the psycholinguistic basic form 3sg form the reference point for the rules of referral, as diachrony is irrelevant for the synchronic analysis of the system as such. Diachronically, the 3rd person forms have been taken over by the 2nd person ones, but Common Scandinavian unfortunately falls outside the scope of this study, and I will not discuss possible explanations for this here[6].

[6] The relevant paradigm for Common Scandinavian is as follows (Wolfgang Krause 1971: *Die Sprache der nordischen Runeneinschriften*, here cited after Enger 1991):

	sg	pl
1	faru	farumʀ
2	fariʀ	fariþ
3	fariþ	faran

As can be seen from the paradigm, we almost have an ideal matrix, in Pike's sense. The 3sg form does not develop into the phonologically expected form in Old Norse. The reader is referred to Enger 1991 for an analysis of the transition, of relevance for the present discussion is the fact that the Common Scandinavian data support the rule proposed in (5) in the text, rather than a rule of referral with referral in the opposite direction:

(i) St/ja : { 1:ID, 2:3, 3:-r}

The third option, overlapping rules, makes use of the Elsewhere Condition[7]:

(6)
```
Pres sg <Mod> : { 2:-t, —:ID }
Pres sg <St/ja> : { 1:ID, —:-r }
Pres sg <ia/ē> : { 1:-i, —:-ir }
Pres sg <ō> : { 1:-a, —:-ar }
```

For the modal verbs, there are two rules, one suffixation rule saying "add an affix –t to the input", and one identity rule saying "output should be identical to input". The latter one holds for all Present Singular forms (for brevity, this is not stated in any of the rules (4)-(6)), whereas the former hold only for 2nd Person Present Singular. Given the Elsewhere Condition, a more specific rule tales precedence over a less specific one, and the identity rule is thus blocked from applying when the 2nd Person rule applies.

As can be seen from the above examples, rules of exponence are used for all three options. This is as expected for a language with rich inflection and an ideal matrix: Each paradigm cell has its own rule. Rules of referral and overlapping are only possible as alternatives when there is homonymy in the paradigm. The rules of referral option makes it possible to merge three 2nd person rules into one, a desirable result. Operating with overlapping rules, i.e. with a combination of underspecification and the Elsewhere Condition, makes it possible to get away with four rules less than for the first option. Still, the price is high, since it gives two exponents a status quite different from each other: The one that expresses two of three cells is seen as the representative for all three cells, whereas the one expressing the last cell is given the role of exception. We thus see that the different alternatives call for different interpretations of the data, and we return to an evaluation of the three different interpretations after having looked at the other paradigms.

The Old Norse Past Singular paradigm is as follows:

ON		St.	Other
	1.	-	-a
Past Sg	2.	-(s)t	-ir
	3.	-	-i

Table 7. Old Norse Past Singular

[7] The symbol "–" to the left of the ":" stands for "default morphosyntactic context" (cf. the rule for Past Sg), and the abbreviation —: ID thus means: "For the default context, perform the identity operation." The options marked as "or:" in subsequent examples denote alternative solutions.

The strong verbs may be generated by rules of exponence, as shown for the Present Tense in (4) above, or by using rules of referral or overlapping exponence. Below, the first and last options are shown. For the other declensions there is no paradigm-internal homonymy, we use three different rules of exponence:

(7) `Past Sg <St> :  { 1:ID, 2:-(s)t, 3:ID }, or`
`Past Sg <St> :  {2:-(s)t, —:ID}`
`Past Sg <  > :  { 1:a, 2:ir, 3:i }`

The Plural paradigms are as follows:

ON — All conjugations

	Pres Pl	Past Pl
1.	-um	-um
2.	-ið (-it)	-uð (-ut)
3.	-a	-u

Table 8. Old Norse Plural paradigms

As we approach more oblique parts of the paradigm, the exponents become more uniform. Here, we have no distinctions between the different conjugations. The forms may be generated either as unanalysed wholes (alternative a), or as composed of two parts. In the latter case, the presence or absence of a final consonant is seen as uniting the two paradigms, and *-u-* is seen as an exponent of Past Tense.

(8) Plural [analysis alternative a.]:
`Pres pl :  { 1:-um, 2:-i>, 3:-a }`
`Past pl :  { 1:-um, 2:-u>, 3:-u }`

(9) Plural [analysis alternative b.]:
`Pres pl :  { 1:-u, 2:-i, 3:-a }`
`Past pl :  { —:u}`
`Plural :  {1:-m, 2:-ð, 3:ID}`

Note that Past Tense, the oblique Tense, distinguishes between fewer declension classes than Present Tense. The only class that deviates from the other ones in the Past Tense is the strong verb class, and this is also the class that (together with the ja class) is not unique in the Present Tense. Although the alternative analysis (b) for the Past Plural divides the exponent in two, and thus highlights the difference between Present and Past,

each of the three person affixes are generated by rules of exponence. Elsewhere rules are marginally represented in the generation of the forms of the Past Tense, since the distinction between different inflection classes is done in the Singular, in the Plural the classes merge. The location of the Elsewhere rules, in the more marked context, is as expected both for reasons of markedness and (probably) usage frequency.

4.1.2. 13th /14th century Norwegian

Moving to the next stage we find that the plural forms are identical to the Old Norse ones that were presented in the previous section. The Present Singular forms are shown in the paradigm below.

No	13/14	St	ja	Mod.	ia/ē	ō
	1.	-er/-	-er/-	-	-ir	-ar
Pres Sg	2.	-er/-	-er/-	-t	-ir	-ar
	3.	-er/-	-er/-	-	-ir	-ar

Table 9. 13th/14th century Norwegian Present Singular forms

The following word-formation rules generate the attested forms:

(10)
```
Pres Sg <Mod> : { 2:-t, —:ID }
Pres Sg <St/ja> : { —:-er/ID }
Pres Sg <ia/ē> : { —:-ir }
Pres Sg <ō> : { —:-ar }
```

For the modal verbs, (10) gives a rule of overlapping exponence, for the other ones no Person specification is given, we have a rule of exponence for Present Singular.

The Past Singular has fewer declension classes, but some Person distinctions are still upheld.

No	13/14	St	Other
	1.	-	-i
Past Sg	2.	-(s)t	-ir
	3.	-	-i

Table 10. 13th/14th century Norwegian Past Singular forms

The rules have the same structure, one has a Limitation component and the other one has not, and the actual formatives differ. The rule format is overlapping exponence, although rules of referral could also have been used.

(11) `Past Sg <St> : { 2:-(s)t, -:ID }`
`Past Sg < > : { 2:-ir, -:-i }`

More rules change from rules of exponence to other rule-types in the N13/14 period, and subject-verb agreement is seriously weakened. This is a major step towards the breakdown of the system, although the system itself is still intact. A paradigm for 1sg, 2sg, 3sg with the exponents *-i, -ir* and *-i* may be interpreted in two ways: Either as `{ 2:-ir, -:-i }`, as is done in the analysis above, or as a set of rules of exponence: `{ 1:-i, 2:-ir, 3:-i }`. According to our analysis, this ambiguity is exactly what paves the way for language change. As long as there are only rules of exponence, any omission will create a gap in the paradigm. Replacing the rules of exponence with default and specific rules, as is done in the analysis above, means that every part of the paradigm is potentially covered by the general rule. The only step missing on the road towards neutralisation is now the omission of the special rule.

4.1.3. Early 15th century Norwegian

One century later, the Singular paradigm is still as it was for 13th-14th century Norwegian. As compared to Old Norse, the plural paradigm has got some new formatives, but the important change is that the formative for 3sg is introduced as an alternate exponent for 1pl.

No	E15	all conj.
	1.	-om/-a
Pres Pl	2.	-er/-en
	3.	-a

Table 11. Early 15th century Norwegian Present Plural forms

The two different outcomes are generated by two different rule sets:

(12) a. `Pres Pl : { 1:-om, 2:-er/-en, 3:-a }`
b. `Pres Pl : { 2:-er/-en, -:-a}`

The same is the case also for the Past Tense forms:

No	E15	all conj.
	1.	-o(m)
Past Pl	2.	-or/-en
	3.	-o

Table 12. Early 15th century Norwegian Past Plural forms

The more conservative variant is generated in (13a), whereas the more radical one may be generated in one of the two ways given in (13b) (cf. the discussion on (9) above).

```
(13)  a.  Past Pl : { 1:-om, 2:-or/-en, 3:-o }
      b.  Past Pl : { 2:-or/-en, —:-o}  , or
          Past Pl : { —:o}
          Plural : { 2:-r, —:-o }
```

The situation is basically the same for No E15 as it was for N13/14 a hundred years earlier, the only change is the weakening of the position for the exponent for 1pl.

4.1.4. Early 16th century Norwegian

Present singular is as for the previous period. Past Singular is shown below:

No	E16	St.	other
	1.	-	-e
Past Sg	2.	-/-(s)t	-e
	3.	-	-e

Table 13. Norwegian Early 16th century Singular Past Tense forms

The following word-formation rules generate the attested forms:

```
(14)  Past sg <St> : { 2:-(s)t, —:ID }
      Past sg <  > : { —:-e }
```

In Plural there are unclear conditions for variation. In addition to the pattern from the previous period, we may have *-a* in the Present and *-o* in the Past, or even *-e* throughout the paradigm.

No	E16	all conj.	
		Pres Pl	Past Pl
	1.	-a/-e/-om	-o(m)/-e
	2.	-a/-e/-er	-o/-e
	3.	-a/-e	-o/-e

Table 14 Norwegian Early 16th c. Past Tense forms

Here is one intermediate option, generating one formative for Present and another one for Past:

(15) Plural (rule set alternative a):
`{ Pres Pl : -a , Past Pl : -o }`

Another option represents the language of speakers that do not make any distinction:

(16) Plural (rule set alternative b):
`{ Pl:-e }`

The most radical option, using the -e formative whenever possible, gives us the following set of rules for No E16:

(17)
```
Mod pres Sg & Strong Past Sg : { (2:-(s)t,)
—:ID }
{ pres Sg : -er , other : e }
or: { nonoblique:-er , oblique:-e }
```

From No E16 onwards, the Person agreement system has broken down for some of the speakers. All subparadigms of all inflection classes have access to forms neutralised for Person. Both the Number and the Tense distinction are upheld however, but often via cumulative exponence (the same exponent expresses both Number and Tense).

Although we here have concentrated upon the development of Old Norse, the Swedish rules are in principle similar. The Danish situation is presented in the next subsection.

4.1.5. Old Danish

Old Danish gives an unstable situation already from the first version on. It is also more modern than its Northern Scandinavian counterparts, being basically three to four centuries ahead of them.

		Present Tense				Past Tense			
		St.	ja	Mod.	ē	St.	ja	Mod.	ē
Sg	1.	-e(r)/-	-e(r)/-	-	-e(r)	-	-e	-e	-e
	2.	-er/-	-er/-	-t	-er	-/-(s)t	-e	-e	-e
	3.	-er/-	-er/-	-	-er	-	-e	-e	-e
Pl	1.	-e/-um	-e/-um	-e/-um	-e/-um	-e	-e	-e	-e
	2.	-e	-e	-e	-e	-e	-e	-e	-e
	3.	-e	-e	-e	-e	-e	-e	-e	-e

Table 15. Old Danish Present and Past Tense verbs

The variation present in Old Danish can be interpreted in many ways. Here we chose two extreme options, one upholding a maximal number of distinctions and the other upholding a minimal one, thus representing the system of both conservative and radical speakers. First comes the rule set generating the most conservative version of Old Danish:

(18)
```
Pres Sg <Mod> : {1:ID, 2:-t, 3:ID}
Sg <St/ja> : ID
Sg <  > : -er
Pl <  > : {1:-um, 2:-e, 3:2}
```

(19)
```
Past <St> : {1;ID, 2:-(s)t, 3:ID}
Past <  > : {—:-e}
```

Then consider the rule set generating the most radical version of Old Danish:

(20)
```
Pres Sg <Mod> & Past Sg <St> : {2:-t, —:ID}
Other :  {—:-e}
```

4.1.6. Early 16th century Danish

The person markers in the Tense/mood system of early 16th c. Danish look as follows:

Da	E16th	St.	ja	Mod.	ō
Pres Sg	1.	-(er)	-(er)	-	-er
	2.	-(er)	-(er)	-(t)	-er
	3.	-(er)	-(er)	-	-er
Pres Pl	1.	-e	-e	-e	-e
	2.	-e	-e	-e	-e
	3.	-e	-e	-e	-e
Past Sg	1.	-	-e	-e	-e
	2.	-st	-e	-e	-e
	3.	-	-e	-e	-e
Past PL	1.	-e	-e	-e	-e
	2.	-e	-e	-e	-e
	3.	-e	-e	-e	-e

Table 16. Early 16th c. Danish, Present Indicative and subjunctive

Person markers in Da E16 can be generated by the following set of rules[8]:

(21)
```
Pres Sg <Mod> :{2:-st, —:ID}
Pres Sg <ō>   :{—:-er}
Pres Sg <   > :{—:-(er)}
Past Sg <St>  :{2:-st, —:ID}
Other :  {—:-e}
```

Danish has *-e* whenever Mood or Number has an oblique property. Thus, in Hjelmslev's terms, Tense dominates Mood and Number. This is in accordance with Bybee's theory of relevance, which gives the following hierarchies:

(22)
```
V: Asp > Tns > Mood > Person
N: Number > Case
```

Of the verb categories, Aspect is not relevant, and Tense dominates Mood and Person. Homonymy thus obeys the dominance pattern that follows from the relevance hierarchy.

We also see that if we restrict our attention to the pattern within each morphosyntactic category, the oblique parts of the paradigms are the ones that do not upheld inflection class distinctions, this is in accordance with homonymy as conditioned by semantic markedness.

4.2. The two phases of the breakdown in the verbal paradigm

The breakdown of person-number inflection of the verbal system comes in two phases: Person disappeared first, and number thereafter. Number distinctions actually survived parasitically, in that the number marker simultaneously expressed Tense, a category that was not lost during this period. The initiating factors are partly changes in the segmental phonology (vowel quality), partly suprasegmental (change in the stress system). Thus, phonological change has initiated the morphological change, by rocking the boat, but in itself phonology cannot be held responsible for the change, since the language at all stages of the transition has had enough phonological resources to upheld the same distinctions as earlier.

Going through the different languages, we find the following:

[8] Note that in the Subjunctive, all Danish declensions have the same suffix -e. Homonymy thus comes for the semantically more marked forms (assuming Indicative to be the unmarked member of the Mood category).

In Norwegian, the rules change from rules of exponence (such as rules (4) to other rule-types (such as rules of referral (5), and rules with overlapping domain (6), (10), (11)) in the N13/14 period. As a result of this, full non-agreeing paradigms could be generated as a result of rule-omission rather than rule change, and the subject-verb agreement thus developed into a situation that leant itself to neutralisation. Hundred years later (No E15), the situation was basically the same. From No E16 onwards, the Person agreement system broke down. All subparadigms of all inflection classes had access to forms neutralised for Person (i.e., for each Person cell, a formative was available that was identical to one of the formatives of the other Person cells), and the non-neutralised forms thus were in a threatened position. Both the Number and the Tense distinction were upheld, often as cumulative exponence, as shown in e.g. (14).

Danish was in the final stage of abolishing the Common Scandinavian model already in the first period of our investigation. During the 400 years between OD and Da E16, only marginal changes have taken place. (pres. 1pl *-e/-um* => *-e* , where *-um* could as well have been a formulaic element). The Da E16 paradigm is governed by a strong division between oblique and non-oblique forms, where the former forms neutralise all person distinctions.

5. The pronominal system

5.1. The paradigms

ON	1st			2nd			3rd	
	s	d	p	s	d	p	m	f
n	ek	vit	vér	þú	þit	þér	hann	hon
a	mik	okkr	oss	þik	ykkr	yðr	hann	hana
d	mér	okkr	oss	þér	ykkr	yðr	honum	henni
g	min	okkar	vár	þín	ykkar	yðvar	hans	hennar

Table 17. Old Norse personal pronouns

In the paradigm for 1st and 2nd person in Old Norse, there is homonymy for Du-Pl Acc=Dat. The two non-oblique axes of the 4x3 paradigm are Nominative and Singular; these are the only ones that escape the homonymy class. The Genitive is deviant in the opposite way, being the

only oblique Case that escapes homonymy. This is probably due to the special status of the Genitive, as discussed in the next section. Homonymy thus falls fully within the oblique part of the paradigm, and includes only non-Singular and non-Nominative forms.

Dual is later lost as a category, but in 2nd person the old Dual forms live on as reanalysed Plural exponents, whereas the old Plural forms carry on as exponents of Plural in 1st person. One reason for this division of labour can be the universal tendency towards maximally distinct exponents for 1st and 2nd person. Choosing 1st and 2nd person exponents from different Number categories are not the only way of obtaining distinct forms, though, as is seen by the (modern) Southwest Norwegian Accusative forms 1pl *okke*, 2pl *dokke* (both from old Dual forms), and from 19th c. Salten (Northern Norwegian) Accusative 1pl *oss* 2pl *ør* (both from old Plural forms)[9].

1st and 2nd person on the one hand and 3rd on the other must be seen as two distinct grammatical systems, as expected, both in the light of data from other languages, and semantically (the referents of 1st and 2nd are always unique, as Speaker and Addressee, the referent of 3rd is not). Nominative, the non-oblique case, is always distinct[10].

5.2. Analysis

Why does the pronominal case system survive, in sharp contrast to the nominal system?

When analysing the verbal (and later the nominal) system we will stress the changes in the morphological characteristics of the system. The pronominal paradigms deviate from the nominal ones in that the latter rely on the morphological process of suffixation, whereas the former is largely suppletive. Thus, the factors striving to erase the case system for nouns simply did not apply for pronouns. A further factor supporting this claim is the fact that after the Genitive case had been expelled from the system, the case distinction that disappeared was the one that could be seen as having affixation-like properties. Thus, from a 3-way opposition *ek – mik – mér*, it is exactly the two cells with forms containing identical initial consonant (*m-*, that is) that are merged, whereas the fully suppletive *ek – mik* has been upheld. The distinction

[9] Thanks to Eldar Heide for pointing this out to me. The Salten forms are taken from Hveding 1968.

[10] Later development in the pronominal systems of the different dialects falls outside the scope of this article, it will be the topic of later research.

between oblique and non-oblique case has also been important: Despite initial element (þ-) in all case forms, 2nd Person has merged the same cells as 1st Person (*þú – þik – þér > du – deg – deg*).

Suppletion vs. suffixation still does not explain why pronouns and nouns behave differently. Suppletive paradigms may be brought into line via take-over, as seen in the loss of the case distinction for demonstratives (NADG *sá / þann / þeim / þess > den*). As is well known, the division of the case declension into two distinct systems is by no means unique to Modern Scandinavian. To the contrary, a split system is well attested from around the world. English and the Romance languages are obvious examples, an example where the distinction is even greater comes from Australia, where several languages have a Nominative-Accusative system for pronouns, and an ergative system for nouns[11]. Systems with a Nominative-Accusative system in the pronominal paradigm but other systems in the nominal paradigm are known from the Ugric languages as well[12]. Thus, Modern Scandinavian seems to have been brought into line by splitting its case system in two. Hansen 1956: 191 sees the referential distinction between pronouns and nouns as the reason for this. Whereas nouns have an immanently defined content that facilitates their correct interpretation in the speech situation, the pronouns do not have a fixed reference, and they thus have to use morphological means such as case to get a correct interpretation. The Australian and Ugric systems support this view: In both cases the pronominal case system is geared towards the central grammatical functions, whereas the nominal system is predominantly adverbial. Still, there are counter arguments to Hansen's functional explanation. In the modern Scandinavian languages the syntactic cues are almost always enough to link the constituents to their correct grammatical functions, and in the

[11] Cf. Dixon 1980: 286 ff., discussing Warrgamay, Yidiny and Dyirbal, but claims them to be representative: "Nominals in almost all Australian languages inflect on this [the ergative, TT] pattern" (p. 286). "In almost every Australian language first and second person pronouns inflect in a nominative-accusative pattern, just like pronouns, nouns and adjectives in Latin and other Indo-European languages." (p. 287).

[12] Northern Khanty has a nominal system with a grammatical Nominative and two adverbial cases (Locative and Lative), and a pronominal system with three grammatical cases (Nominative, Accusative and Dative) (cf. Rédei 1965). Northern Mansi has a nominal case system with the grammatical Nominative and 5 adverbial cases (Locative, Lative, Ablative, Instrumental and Translative), whereas its pronominal system possesses Nominative, Accusative, Dative, Ablative and Comitative (cf. Kálmán 1975). Both languages participate in a Sprachbund around the lower part of the Ob' river, and they have a nominal case system with only one grammatical case for all direct arguments, accompanied by a small set of local cases, and a pronominal case system geared towards distinguishing the direct arguments of the clause.

few ambiguous cases, pragmatic factors may help. Moreover, in several dialects the case system is weakened, thus challenging the claim that pronouns, as opposed to nouns, "must" show a case distinction. In the Gudbrandsdalen dialect, no case distinction is upheld for the plural pronouns (123 Plural *oss / døkk / døm*, cf. Skjekkeland 1977: 96 ff.), and in several dialects at the southern coast of Southern Norway, the Nominative form of the 2nd Person Singular pronoun *du* is used in the Accusative whenever stressed, whereas the traditional Accusative form *dæ* is used for stressless objects (Torp 1980, Kristoffersen 1997). Still, no dialect shows homonymy for 1st Person Singular, and there is a distinction for the stressless 2nd sg forms and the case distinction in 1st, 2nd Singular is thus still intact.

The morphological processes involved for the pronouns differed from the ones for nouns, and belonging to different parts of the grammatical system, nouns and pronouns could develop different case systems. For obvious reasons, pronouns also never acquired Definiteness as a morphological category, whereas nouns did, an addition that contributed to a change in the whole nominal system, as we shall see in the following section.

6. The nominal system

The case system is linked to the gender system, and thus ultimately to the system of animacy. Nominative and Accusative are never distinguished for neuter nouns, and only partially for feminine nouns (feminine nouns always show homonymy in Plural and for most ō-stems and all i-stems, whereas weak feminines and some feminine ō-stems upheld the distinction in Singular). All masculines upheld the distinction:

Decl.	m.a-st	id.pl.	f. ō	id.pl.	f. jō	id.pl.	n.a-st.	id.pl.	n.an-st	id.pl
nom	armr	armar	mön	manar	mær	meyiar	land	lönd	hjarta	hjörtu
acc	arm	arma	mön	manar	mey	meyiar	land	lönd	hjarta	hjörtu

Table 18. Nominative-accusative homonymy

Thus, formally speaking, Gender dominates Case, in Hjelmslev's sense. The reason for this is probably that in most sentences, neuter nouns were unlikely to appear as subjects of transitive verbs, rather, they were found as objects, as arguments in existential sentences, or as subjects of copular verbs taking predicatives as complements. Ultimately, the mas-

culine Nominative marker also functions as a Gender marker[13].

6.1. The loss of Case as a category for nouns in Norwegian

The empirical starting point is a paradigm fixed to four points in time, Old Norse (ON), Old Norwegian (ONw), and 14th and 15th c. Norwegian (N14 and N15), which gives us three transition periods. They are marked with Roman numerals I, II, and III below. The paradigm itself is found in the appendix. We look at the indefinite and definite paradigms separately, and go through each of the three transition periods. Formulating morphological rules is straightforward; here we concentrate upon tracing the changes.

6.1.1. The indefinite paradigm

Transition period I, from ON to ONw.

	ON	ONw
	Strong masc. sg.	
N	r	(er)
A	-	-
D	i	e
G	s//ar	s//ar

	ON	ONw
	Strong fem. sg.	
N	-	-
A	(u)	(u)
D	(u)	(u)
G	ar	s/ar

	ON	ONw
	Plural a(n)-stems	
N	ar	ar
A	a	a
D	um	um
G	(n)a	(n)a

	Weak masc. sg	
N	i	i
A	a	a
D	a	a
G	a	a/e

	Weak fem. sg.	
N	a	a
A	u	u
D	u	u
G	u	u

	Plural i-stems	
N	ir	ir
A	i/u	i/u
D	um	um
G	(n)a	(n)a

Table 19. Indefinite nouns, ON to ONw

The position of the strong Masculine Nominative marker *-r* is weakened. The Dative marker is reduced from *-i* to *-e*, but this in itself does not affect the paradigm as such.

Otherwise no differences emerge in the transition from the ON to the ONw system.

[13] More data are needed in order to account for the development from Old Norse into different Norwegian dialects. The modern Oppland forms *hesta, jenten*, both ind.pl, are a case in point. They must have developed from different consonants in the Nom/Acc Definite Plural forms, *-n-* and *-rn-* (or some assimilated forms), such differences cannot be traced in the table.

Transition period II, from ONw to N14

	ONw	N14
	Strong masc. sg.	
N	(er)	(er)
A	-	-
D	e	e
G	s//ar	s//s~ar

	ONw	N14
	Strong fem. sg.	
N	-	-
A	(u)	-
D	(u)	-
G	s/ar	s/a(r)/-

	ONw	N14
	Plural a(n)-stems	
N	ar	ar
A	a	a
D	um	om
G	(n)a	(n)a

	Weak masc. sg	
N	i	e
A	a	a
D	a	a
G	a/e	s/a/e

	Weak fem. sg.	
N	a	a
A	u	o
D	u	o
G	u	o

	Plural i-stems	
N	ir	er
A	i/u	e/o
D	um	om
G	(n)a	(n)a

Table 20. Indefinite nouns, ONw to N14

The position of the strong Masculine Nominative marker *-r* is weakened even more, strong feminine accusative *-u* is lost, and we have a potential identity Nom=Acc[14] for all strong nouns. *-s* is now possible as a genitive marker for all strong nouns and for weak masculines in the Singular. Stressless *i* -> *e* and stressless *e* -> *o* in final position of strong nouns

The case system is still basically the same as before.

Transition period III, from N14 to N15.

	N14	N15
	Strong masc. sg.	
N	(er)	**(e)**
A	-	**(e)**
D	e	-
G	s//~ar	s

	N14	N15
	Strong fem. sg.	
N	-	-
A	-	-
D	-	-
G	s/a(r)/-	**s/-**

	N14	N15
	Plural a(n)-stems	
N	ar	**a(r)**
A	a	**a(r)**
D	om	(om)
G	(n)a	(n)a

	Weak masc. sg	
N	e	**e/a**
A	a	**e/a**
D	a	**e/a**
G	s/a/e	s/a/e

	Weak fem. sg.	
N	a	**e/a/o**
A	o	**e/a/o**
D	o	**e/a/o**
G	o	**s/o/e/a**

	Plural i-stems	
N	er	**e(r)**
A	e/o	**e(r)**
D	om	(om)
G	(n)a	s/a/e

Table 21. Indefinite nouns, N14 to N15

[14] The formalism Gen=Acc expresses that Genitive and Accusative share exponent, whereas Acc≠Dat expresses the opposite situation.

As a result of the transition from N14 to N15, Nominative = Accusative for all declension classes, but with a systematic lack in direction of take-over (both the old Nominative and the old Accusative formative is possible in both case contexts for all declension classes). Nom=Acc=Dat is an option for all declension classes, not only for the ones that previously had an Acc=Dat identity. Genitive is no longer part of the Case declension, but a syntactic clitic (cf. Delsing 1991 and Norde 1997 for several arguments for this view, and the next section for a discussion).

In this short period of approximately 3 generations, the Old Norse case system disappears from the indefinite declension.

6.1.2. The definite paradigm

Transition period I, from ON to ONw.

	ON	ONw
	Strong masc. sg.	
N	rinn	(r)inn
A	inn	inn
D	inum	inum
G	sins	(s)ins

	ON	ONw
	Strong fem. sg.	
N	in	in
A	ina	ina
D	inni	inni
G	arinnar	arinnar

	ON	ONw
	Plural a(n)-stems	
N	arnir	arnir
A	ana	ana
D	unum	unum
G	anna	anna

	Weak masc. sg	
N	inn	inn
A	ann	ann
D	anum	anum
G	ans	ans

	Weak fem. sg.	
N	an	an
A	una	una
D	unni	unni
G	unnar	unnar

	Plural i-stems	
N	irnir	irnir
A	ina	ina
D	unum	unum
G	anna	anna

Table 22. Definite nouns, ON to ONw

The strong Masculine Nominative *-r* is weakened.

Otherwise there are no differences between the ON and the ONw systems.

Transition period II, from ONw to N14.

	ONw	N14
	Strong masc. sg.	
N	(r)inn	enn
A	inn	enn
D	inum	enom
G	(s)ins	(s)ens

	ONw	N14
	Strong fem. sg.	
N	in	en
A	ina	ena
D	inni	enne
G	arinnar	(s)ens/ennes

	ONw	N14
	Plural a(n)-stems	
N	arnir	arner
A	ana	ana
D	unum	onom
G	anna	anna

	Weak masc. sg	
N	inn	enn
A	ann	ann
D	anum	anom
G	ans	ans/ens

	Weak fem. sg.	
N	an	an
A	una	ona
D	unni	onne
G	unnar	onn(e)s

	Plural i-stems	
N	irnir	erner
A	ina	ene
D	unum	unum
G	anna	anna

Table 23. Definite nouns, ONw to N14

-s is introduced as an exponent for Genitive in the Singular. There is vowel reduction, stressless *i* -> *e* and stressless *e* -> o across the board.

The case system is basically the same as before.

Transition period III, from N14 to N15.

	N14	N15
	Strong masc. sg.	
N	enn	enn
A	enn	enn
D	enom	(enom)
G	(s)ens	(s)ens

	N14	N15
	Strong fem. sg.	
N	en	en
A	ena	en
D	enne	enne/onne
G	(s)ens/ennes	ens/ennes

	N14	N15
	Plural a(n)-stems	
N	arner	ane
A	ana	ane
D	onom	(onom)
G	anna	anes/ane

	Weak masc. sg	
N	enn	enn
A	ann	ann
D	anom	(enom)
G	ans/ens	ens

	Weak fem. sg.	
N	an	an/en
A	ona	en
D	onne	(ene)
G	onne(s)	ens/onnes

	Plural i-stems	
N	erner	ene
A	ene	ene
D	unum	(onom)
G	anna	enes/annas

Table 24. Definite nouns, N14 to N15

Nominative and Accusative become identical for all declension classes except the weak Masculines, but there is no systematic variation

between old forms. The Dative has a unique marker, but the position of this marker is uncertain for several dialects. Genitive is no longer a case affix.

This period does not represent the same total breakdown for the definite forms as for the indefinite ones. Nom=Acc and the Genitive has developed into a clitic, but the distinct Dative formative implies that a 2-case system is retained (for the dialects that do not lose it).

We now move on to a discussion of why we have the attested pattern.

6.2. Why do we get this development?

6.2.1. Genitive

Genitive changes into a clitic as soon as two things happen (cf. Delsing, op.cit.): Firstly, its formative becomes *-s* uniformly throughout the declension classes. The introduction of *-s* into the weak paradigms is especially important, since any vowel alternation will affect the stem of the word, whereas adding an *-s* to the final vowel affects the word-form rather than the stem. This is a crucial difference between clitics and affixes. Secondly, the distinction is lost on adjectives.

Syntactically, the Genitive is then reanalysed as a clitic, and disappears from the case system proper, and from contexts other than prenominal possessor.

6.2.2. Dative and the Nominative-Accusative merger

The situation Dat=Nom≠Acc does not occur in any paradigm.

Whenever Dat=Acc≠Nom, Dative is parasitic upon Accusative in the further development (Nominative takes over the exponent for Dat=Acc, or Dat=Acc takes over the exponent for Nominative).

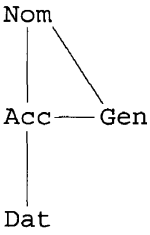
Whenever Dat≠Acc≠Nom (for the strong nouns, and in Plural), this situation is changed into Dat≠Acc=Nom, and then, eventually, into Dat=Acc=Nom (with Dat taking over the Acc=Nom exponent). The ambivalence concerning the direction of take-over is consistent throughout the paradigm.

6.2.3. The geometric shape of the paradigm

Following an idea of Rasmus Rask, developed by Frans Plank, we may say that *homonymy is geometrically conditioned.* For each grammatical category, there will be a way of ordering its properties (the ordering should be kept constant for all the inflection classes) so that no class of homonymous forms contain non-members. A natural question at this

point is why homonymy should be subject to such a constraint. This condition restricts the number of possible paradigms, in itself a welcome result. A first step towards understanding variation is to make formal models that the variation is bound to follow, in itself a substantial result. Neither Plank nor I have a good answer to why the model should look just like this, but a further investigation should probably start along the following path: Morphological neutralisation (no distinction between members of a morphosyntactic category C whenever another category D have certain values) may be seen as the minimal graph: a point. Rather than a question of either/or, a process towards neutralisation can then be seen as a gradual reduction of the number of nodes in the inflectional network of nodes that Plank suggested.

For Old Norse, we may set up the following diagram[15]:



Nom=Acc, Acc=Dat, Acc=Gen, Nom=Gen,
Nom=Acc=Dat, Nom=Acc=Gen,
Acc=Dat=Gen, Nom=Acc=Dat=Gen

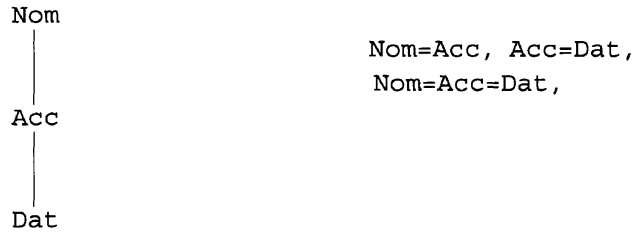
The table is to be read as follows: In the Old Norse declension system, there are paradigms that show homonymy patterns of each of the 7 types shown above, but no others. Thus, to take two examples, neither Nom≠Acc≠Dat=Gen nor Acc≠Nom=Dat=Gen occur. This shows a linear organisation of the Old Norse cases with Genitive the odd man out, and Accusative the wheel through which all other homonymy classes must go. The distinction between Genitive and Dative does not follow from the diagram itself, rather the change in orientation (horizontal vs. vertical link) is a mnemonic for denoting central vs. peripheral position.

We may draw two mutually independent interpretations of this pattern:

[15] This is actually the diagram that Plank gives for Modern Icelandic. For Old Norse he gives a diagram without the Nom=Gen link. The only Nom=Gen homonymy that excludes Accusative in Modern Icelandic is the one we find for a certain class of consonant stem feminines: *kýr* 'cow', *ær* 'sheep'. These words had the same paradigm in Old Norse, though (thanks to Arne Torp for reminding me of the Old Norse and Modern Icelandic facts). According to Kress 1982: 75, the Gen suffix *-r* is often replaced by *-ar*, thus there is a tendency towards linearity in the homonymy pattern.

a. Accusative is the weak point of the vertical axis (being the only member of the vertical axis, that will have to participate in all homonymy classes), and it will be the first to break down (actually, it will have to participate in **all** homonymy classes).
b. Genitive is the peripheral member of the set, a priori it will either have to be linked firmer to the system or excluded (as we have seen in N14).

For N14 Genitive is lost, and we are left with the vertical part of the graph:



For the definite subparadigm of N15, the Accusative is lost, and we are left with one possible homonymy class[16]:

6.2.4. Phonological reasons for the transition

The standard explanation for the breakdown of the case system is that it is a consequence of a phonological development. The results of the present investigation cast doubts upon this explanation.

In itself, the lowering of stressless high vowels into mid vowels does not alter the 3-vowel system that was found in stressless syllables in Old Norse. At a certain stage of history, this lowering took place according to

[16] As pointed out to me by Eldar Heide, there are some isolated examples of loss of Dative before Accusative, notably in some South-Eastern Norway (Kollerud, Østfold 1490) and Bergen (1462), as seen in written sources (DN) from the years indicated. Although this pattern does not go against the geometrical analysis as such, it is not what we would expect, given the position of Accusative in the graph. The pattern referred to here is found only in these sources, but it still deserves further analysis.

a system of vowel harmony, this process is also irrelevant to the vowel system as such. Even the merger of *e* and *o* into *e* should not have any effect upon the system, since not a single Old Norse case distinction is dependent upon the distinction between *i* and *u* only (cf.). Also, N15 does not impose a ban on stressless word-final vowels, we do not witness a large-scale apocope process. The main vowel distinction in the case system (e.g. as the distinction between Nominative and Accusative in the weak declension) is the *a* ~ non-*a* -distinction, and this phonological distinction is upheld numerous places in the inflectional system. One might of course point to the fact that there are phonological principles governing the order of apocope: Given that the process is apocope and not syncope, final elements will have to go before non-final ones, and nonfinal vowels are thus preserved longer than final ones. Still, at each stage in the development, the language system has accepted a 3-vowel system in the final syllable. The infinitive suffix has been vowel final since Proto-Scandinavian, but it is still preserved (partly or wholly) as *-a* throughout the period under investigation. Since the apocope has not operated in a morphology-insensitive way, but given different results for the different parts of speech, we must conclude that the reasons for the transition cannot be sought within phonology, or at least not within phonology alone.

6.2.5. *Morphological reasons for the transition*

As shown by Delsing, op.cit., the reanalysis of the Genitive is a result of the introduction of a uniform clitic-like exponent. This gives rise to the breakdown of declension classes as a morphological system. Hence, the distinction between strong and weak nouns becomes more important.

Definite is introduced as a grammatical category prior to the period covered by the data presented in this article, and formal means that used to mark Case (such as the suffixes *-i/-e*, *-a*) now mark Definiteness instead. The introduction of definiteness also introduces tone to the system. Now, there are two kinds of disyllabic strong words: The ones with Tone 1, being Singular and Definite, and the ones with Tone 2, being Plural. All monosyllabic words are of course strong and Singular (or neuter and Indefinite Plural).

This clear picture is disturbed by case affixes in the Singular: Any Accusative or Dative formative in the Indefinite Singular carries Tone 2, thus signalling plurality or membership in the weak declension class.

The most important clues for declension class membership were the distinct affixes on the Genitive Singular, Dative Singular, and Nomina-

tive and Genitive Plural. All these clues, except the Nominative Plural, are lost.

The only class distinction that is independent upon the membership is the strong/weak distinctions, that can be read out of the number of syllables in the basic indefinite form, and out of the word tone in the basic definite form.

6.2.6. Definiteness as an additional dimension in the inflectional system

One of the basic distinctions between agglutinative and fusional morphological systems is that the former systems use simple matrices, whereas the latter use ideal ones, in the terminology introduced in section 2. As shown by Plank 1986, there seems to be some sort of upper limit on how many morphological formatives a system may tolerate (Plank suggests that this limit is appr. 30 formatives). In a homonymy-free ideal matrix, the number of formatives equals the number of cells. Disregarding declensional classes, a paradigm with 3 Genders × 2 Numbers × 4 Cases × 2 Definites contains of 48 cells. As can be seen from the Old Norse paradigm, it never contained anything even close to 48 formatives. Within the indefinite paradigm, there was a lot of homonymy, but the additional dimension caused by the Definite forms was not expressed by uniqe formatives, but rather by a transparent simple matrix, with segmentable formatives for Case and Definiteness. Given the origin of Definiteness as a morphological category, grammaticalisation of stressless definite articles, this is of course no surprise. The point in the present context is that as the language developed, the agglutinative character of the paradigm weakened, and the affix strings developed into unanalysable affixes in an ideal matrix type. Thus, *-a* was still an affix, but now for Definiteness rather than for Accusative.

6.3. Summing up

From a system with 4 cases × 3 genders × 3 (or more) declension classes we go to a system with 3 genders × 2 declension classes × 2 definiteness values.

Case is neutralised for indefinite values of Definiteness. The reason for this may be twofold, and these reasons draw in the same direction: There is more phonological material in the definite forms (this in itself does not secure the Dative, the affix can still be dropped if not for phonological reasons). The definite form is the prototypical, hence more frequent forms in the syntactic positions that distinguish between oblique

and non-oblique cases. The few cases with generic interpretation of indefinites in Dative or Genitive context are reanalysed as undeclined adverbials (Dative: *ta av dage* 'take off day-Dat' > killed, *dra av garde* 'go off farm-Dat' > leave, *til fjells* 'to mountain-Gen').

The Swedish and Danish paradigms are not discussed here, but in principle they show the same development as the Norwegian paradigms, with the exception that Danish starts out earlier. In order to conduct a thorough analysis of Danish, more data from the earliest period are needed. The paradigms themselves are found in the appendix.

7. Conclusion

The change from the Old Norse to the Modern Scandinavian inflectional system happened fast, probably during a span of 3 generations, from the 14th to the 15th century (cf. e.g. section 6.1.1.). The transition had started earlier, by several changes paving the way for the system. Characteristic features for the pre-transition system were ambiguous paradigms, paradigms that could be generated both with detailed exponence rules, and with general rules combined with exceptional rules.

Phonology has been shown to play a more marginal role than what has been assumed in earlier studies, especially in neo-grammarian work. Although the processes analysed here often are initiated by seemingly innocent phonological changes, the inflectional system breaks down for morphological reasons internal to the paradigm structure as such. First, minor changes in the formatives in different inflectional classes open up for reanalysis in the rule component generating the word-forms, from rules of exponence to elsewhere rules and rules of referral. Then new generations of speakers analyse the input in radically different ways from earlier generations, and a totally new morphology emerges within a short time-period.

8. Appendix

ON		St.	ja	Mod.	ia/ē	ō
	1.	-	-	-	-i	-a
pres Sg	2.	-r/-	-r/-	-t	-ir	-ar
	3.	-r/-	-r/-	-	-ir	-ar
	1.	-um	-um	-um	-um	-um
pres Pl	2.	-ið (-it)	-ið (-it)	-ið (-it)	-ið (-it)	-ið (-it)
	3.	-a	-a	-a	-a	-a
	1.	-	-a	-a	-a	-a
Past Sg	2.	-(s)t	-ir	-ir	-ir	-ir
	3.	-	-i	-i	-i	-i
	1.	-um	-um	-um	-um	-um
Past Pl	2.	-uð (-ut)	-uð (-ut)	-uð (-ut)	-uð (-ut)	-uð (-ut)
	3.	-u	-u	-u	-u	-u

Table 25. Old Norse

No	13/14	St	ja	Mod.	ia/ē	ó
	1.	-er/-	-er/-	-	-ir	-ar
pres Sg	2.	-er/-	-er/-	-t	-ir	-ar
	3.	-er/-	-er/-	-	-ir	-ar
	1.	-um	-um	-um	-um	-um
pres Pl	2.	-ið/-ir	-ið/-ir	-ið/-ir	-ið/-ir	-ið/-ir
	3.	-a	-a	-a	-a	-a
	1.	-	-i	-i	-i	-i
Past Sg	2.	-(s)t	-ir	-ir	-ir	-ir
	3.	-	-i	-i	-i	-i
	1.	-um	-um	-um	-um	-um
Past Pl	2.	-uð (-ur)	-uð (-ur)	-uð (-ur)	-uð (-ur)	-uð (-ur)
	3.	-u	-u	-u	-u	-u

Table 26. 13th/14th century Norwegian

No	E15	St	ja	Mod.	ia/ē	ō
	1.	-er/-	-er/-	-	-er	-ar
pres Sg	2.	-er/-	-er/-	-t	-er	-ar
	3.	-er/-	-er/-	-	-er	-ar
	1.	-om/-a	-om/-a	-om/-a	-om/-a	-om/-a
pres Pl	2.	-er/-en	-er/-en	-er/-en	-er/-en	-er/-en
	3.	-a	-a	-a	-a	-a
	1.	-	-e	-e	-e	-e
Past Sg	2.	-(s)t	-er	-er	-er	-er
	3.	-	-e	-e	-e	-e
	1.	-o(m)	-o(m)	-o(m)	-o(m)	-o(m)
Past Pl	2.	-or/-en	-or/-en	-or/-en	-or/-en	-or/-en
	3.	-o	-o	-o	-o	-o

Table 27. Early 15th century Norwegian

No	E16th	St	ja	Mod.	ia/ē	ō
	1.	-er/-	-er/-	-	-er	-ar
pres Sg	2.	-er/-	-er/-	-/-t	-er	-ar
	3.	-er/-	-er/-	-	-er	-ar
	1.	-a/-e/-om	-a/-e/-om	-a/-e/-om	-a/-e/-om	-a/-e/-om
pres Pl	2.	-a/-e/-er	-a/-e/-er	-a/-e/-er	-a/-e/-er	-a/-e/-er
	3.	-a/-e	-a/-e	-a/-e	-a/-e	-a/-e
	1.	-	-e	-e	-e	-e
Past Sg	2.	-/-(s)t	-e	-e	-e	-e
	3.	-	-e	-e	-e	-e
	1.	-o(m)/-e	-o(m)/-e	-o(m)/-e	-o(m)/-e	-o(m)/-e
Past Pl	2.	-o/-e	-o/-e	-o/-e	-o/-e	-o/-e
	3.	-o/-e	-o/-e	-o/-e	-o/-e	-o/-e

Table 28. Early 16th century Norwegian

		St	ja	Mod.	ē
pres Sg	1.	-e(r)/-	-e(r)/-	-	-e(r)
	2.	-er/-	-er/-	-t	-er
	3.	-er/-	-er/-	-	-er
pres Pl	1.	-e/-um	-e/-um	-e/-um	-e/-um
	2.	-e	-e	-e	-e
	3.	-e	-e	-e	-e
Past Sg	1.	-	-e	-e	-e
	2.	-/-(s)t	-e	-e	-e
	3.	-	-e	-e	-e
Past Pl	1.	-e	-e	-e	-e
	2.	-e	-e	-e	-e
	3.	-e	-e	-e	-e

Table 29. Old Danish

Da E16th		St	ja	Mod.	ō
pres Sg	1.	-(er)	-(er)	-	-er
	2.	-(er)	-(er)	-(t)	-er
	3.	-(er)	-(er)	-	-er
pres Pl	1.	-e	-e	-e	-e
	2.	-e	-e	-e	-e
	3.	-e	-e	-e	-e
Past Sg	1.	-	-e	-e	-e
	2.	-st	-e	-e	-e
	3.	-	-e	-e	-e
Past Pl	1.	-e	-e	-e	-e
	2.	-e	-e	-e	-e
	3.	-e	-e	-e	-e

Table 30. Early 16th c. Danish

ON	1st			2nd			3rd	
	s	d	p	s	d	p	m	f
n	ek	vit	vér	þú	þit	þér	hann	hon
a	mik	okkr	oss	þik	ykkr	yðr	hann	hana
d	mér	okkr	oss	þér	ykkr	yðr	honum	henni
g	min	okkar	vár	þín	ykkar	yðvar	hans	hennar

Table 31. Old Norse personal pronouns

	indefinite				definite			
	ON	ONw	N14	N15	ON	ONw	N14	N15
N m st	r	(er)	(er)	(e)	rinn	(r)inn	enn	enn
A	-	-	-	(e)	inn	inn	enn	enn
D	i	e	e	-	inum	inum	enom	(enom)
G	s//ar	s//ar	s//s~ar	s	sins	(s)ins	(s)ens	(s)ens
N m w	i	i	e	e/a	inn	inn	enn	enn
A	a	a	a	e/a	ann	ann	ann	ann
D	a	a	a	e/a	anum	anum	anom	(enom)
G	a	a/e	s/a/e	s/a/e	ans	ans	ans/ens	ens
N f st	-	-	-	-	in	in	en	en
A	(u)	(u)	-	-	ina	ina	ena	en
D	(u)	(u)	-	-	inni	inni	enne	enne/ onne
G	ar	s/ar	s/a(r)/-	s/-	arinnar	arinnar	(s)ens/ ennes	(s)ens/ ennes
N f w	a	a	a	e/a/o	an	an	an	an/en
A	u	u	o	e/a/o	una	una	ona	en
D	u	u	o	e/a/o	unni	unni	onne	(ene)
G	u	u	o	s/o/e/a	unnar	unnar	onne(s)	ens/ onnes
N a(n) Pl	ar	ar	ar	a(r)	arnir	arnir	arner	ane
A	a	a	a	a(r)	ana	ana	ana	ane
D	um	um	om	(om)	unum	unum	onom	(onom)
G	(n)a	(n)a	(n)a	(n)a	anna	anna	anna	anes/ane
N i Pl	ir	ir	er	e(r)	irnir	irnir	erner	ene
A	i/u	i/u	e/o	e(r)	ina	ina	ene	ene
D	um	um	om	(om)	unum	unum	unum	(onom)
G	(n)a	(n)a	(n)a	s/a/e	anna	anna	anna	enes/ annas

Table 32. The Norwegian masculine and feminine case system from Old Norse to the 15th c

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