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Barry J. Blake and Kate Burridge (eds)

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SELECTED PAPERS FROM THE 15TH INTERNATIONAL CONFERENCE ON HISTORICAL LINGUISTICS, MELBOURNE, 13–17 AUGUST 2001

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Preface

This volume contains 25 papers from the 15th International Conference on Historical Linguistics (ICHL 15) held August 13–17, 2001, in Melbourne, hosted by the Linguistics Program of La Trobe University. Over 200 people attended over the five days of the conference. Six plenaries were presented plus 110 papers. On the final day there were three workshops at which another 32 papers were presented. This volume presents a selection of papers presented at the general sessions and the plenaries. All papers offered for inclusion in the proceedings were read by at least two referees.

It was Nigel Vincent who suggested a decade ago that La Trobe offer to host ICHL, and 2001 was the first time this conference was held in the southern hemisphere. As might be expected this meant a greater participation from Australian linguists, mainly reflected in the workshop on Reconstruction and subgrouping in Australian languages, but the 150 presenters came from 33 countries with particularly strong representation from the United States and northern Europe. The selection in this volume reflects the fact that the majority of papers were on morphosyntax with a smaller number on phonology. There is one paper on semantics (Riemer) and one on contact (Aikhenvald).

Finally we would like to thank those who supported the conference and the production of this volume. Our vice-chancellor, Michael Osborne was generous in providing financial backing, while our secretary, Rosemary Bellair, worked indefatigably on setting up the conference, and Jo Taylor carried out the arduous task of copy-editing this volume.

Barry J. Blake,
Kate Burridge
October 2002
Language contact and language change in Amazonia

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1. Amazonian languages and comparative linguistics

The Amazon basin – an area of great linguistic diversity – is linguistically one of the least known regions of the world. It comprises around 300 languages grouped into over 15 language families, and a fair number of isolates. The six major linguistic families of the Amazon basin are Arawak, Tupí, Carib, Pano, Tucanoan and Jê; smaller families include Makú, Guahibo, Yanomami, Bora-Witoto, Harakmbet, Arawá and Chapacura. (Various macro-groupings or ‘stocks’ have been suggested, by Greenberg and others; these are almost without exception illusory and otiose.)

Until recently, classifications of South American languages have been almost exclusively the work of scholars who had little first hand knowledge of the languages involved. Loukotka (1968) and Tovar and Tovar (1984) are now somewhat outdated, but on the whole reliable. Kaufman’s (1990) classification was flawed; it has been uncritically followed by Campbell (1997), and contains numerous factual errors. Dixon and Aikhenvald (1999a) draw on the expertise of scholars familiar with the individual language families; and can be regarded as a ‘state of the art’ classification.

The languages of Amazonia share a number of structural features, enough to be considered a large diffusion area, which includes several distinct subareas. Features of the ‘Amazonian’ linguistic type are summarized in Aikhenvald and Dixon (1998) and Dixon and Aikhenvald (1999a). Frequent migrations and language contacts bring about extensive borrowing and grammatical change, restructuring the grammar in agreement with areally spread patterns, reanalyzing existing morphemes, and introducing new morphology (often by grammaticalizing lexical items).
All the major language families are highly discontinuous. For instance, Arawak languages are spoken in over 10 locations north of the Amazon, and over 10 south of the Amazon. The language map of South America resembles a patchwork quilt where a dozen or so colours appear to be interspersed at random. This produces a linguistic situation unlike those found in most other parts of the world, creating difficulties for distinguishing between similarities due to genetic retention and those due to areal diffusion.

For the major families, a good deal of comparative work has been done on Carib (Gildea, Derbyshire); the Tupí-Guaraní branch of the Tupí family (Jensen) and, to a lesser extent, Tupí itself; Arawá (Dixon); Pano (Snell, Loos); Bora-Witoto (Aschmann) and Tucanoan. Very little comparative work has been done on Jê, or on the reconstruction of small families other than Arawá. The Arawak language family is the largest (spread from Argentina to Central America) and typologically the most diversified, due to various contact and substratum influences. Some work has been done and a fair amount remains to be done (see Payne 1991 & Aikhenvald 1999).

In the remainder of this paper I concentrate on patterns of contact-induced language change in two reasonably well-documented, genetically unrelated and typologically different language families north of the Amazon – Arawak and Tucanoan.

2. Linguistic diffusion and grammatical borrowing

Diffusion of linguistic features between genetically unrelated and typologically different languages in varied situations of language contact allows us to determine tendencies and preferences in grammatical contact-induced change (though this does not necessarily involve establishing straightforward ‘hierarchies’ of borrowability).

Languages reflect the sociolinguistic history of their speakers; and language attitudes as well as relationships between languages within a contact situation influence the outcome of language contact. However, I find it hard to agree with the basic starting point in Thomason and Kaufman (1988:35), that ‘it is the sociolinguistic history of the speakers, and not the structure of their language, that is the primary determinant of the linguistic outcome of language contact.’ Under different conditions and for different language types outcomes can be quite different. The oft-quoted ‘typological distance’ between languages in contact often becomes blurred – but in different ways.

My main thesis sounds almost trivial: different language contact situations may affect typologically similar grammars in distinct ways. Multilateral diffusion in a linguistic area, without any relationships of dominance or diglossia, involves en-
Language contact and language change in Amazonia

...enrichment of patterns. (This obviously goes against popular belief that language change under contact involves ‘simplification’ and ‘deterioration’ – overall loss rather than gain.) One-to-one language contact involves levelling of structures, a kind of ‘mutual adjustment’ of the two languages. And one-to-one language contact with dominance results in rapid change (within one generation) leading to considerable loss of patterns in what is becoming a minority language.

Language contact may bring about gradual convergence resulting in structural isomorphism, whereby the grammar and semantics of one language is almost fully replicated in another (cf. Gumperz & Wilson 1971; Nadkarni 1975; Friedman 1997; also known as metatypy: Ross 2001). This – vague – concept of convergence may involve at least three kinds of processes:

i. Convergence can result in the adoption of new patterns by all languages. New patterns coexist with the old ones; and new rules for their distribution are developed. (This is somewhat comparable to the creation of etymological dou-blets – i.e. different words borrowed at different times which develop different meanings in the recipient language, e.g. English chief and chef, both from French chef). The isomorphism of grammatical structures is not complete since each language preserves its own ‘typological profile’ alongside adoption of a ‘foreign’ one.

ii. Alternatively, convergence can result in creating a new common grammar, which combines features of both systems in contact – a compromise between the structures. Grammatical isomorphism may be almost complete.

Convergence of types (i) and (ii) presupposes the lack of any relationships of dominance or diglossia (in terms of high language-low language relationship) between the languages in contact: that is, no language (or community of language speakers) has more prestige than its neighbours.

iii. Convergence can also involve adoption of the structure of another language and concomitant loss of categories which have no equivalent in the other language. The necessary condition for this is the relationship of dominance between languages. This kind of convergence involves loss of patterns and is often accompanied by attrition and obsolescence of the ‘minority’ language. It results in morpheme-for-morpheme intertranslatability between the languages in contact.

In all these cases convergence involves system-altering changes and restructuring of at least one of the languages in contact. A head-marking language can acquire dependent-marking properties; a suffixing language may acquire prefixes (and lose suffixes); an active-stative language may acquire nominative-accusative properties.

The very idea of such restructuring and concomitant system-altering changes goes against the oft quoted ‘structural compatibility requirement’. In its strong...
form, this requirement states that grammatical borrowing (viewed broadly) can operate only between similar systems (cf. Meillet 1914:84, 87; Moravcsik 1978; Weinreich 1953:25 etc.) This claim holds only as a tendency (as demonstrated by Harris & Campbell 1995, and Haig 2001). But if it holds at all, the question arises: how do the languages come to be structurally similar in the first place? The above three types of convergence provide an answer.

I will illustrate this with a case study of two instances of language contact between North Arawak and Tucanoan languages in northwest Amazonia. Their speakers share numerous cultural patterns. They are slash-and-burn agriculturalists with very similar lifestyle, myths and beliefs; and they have a similar degree of sophistication in their weapons and food-gathering techniques. All communities are smallish and tightly-knit (cf. Ross 2001; for instance, as the result of classificatory kinship system everyone within a community is related to everyone else). The general tendency is to keep their languages apart by limiting the influx of borrowed forms. These social similarities help reduce the number of potential sociolinguistic variables which might influence the outcome of language contact.

3. Language contact situations to be discussed

Two kinds of language contact between Tucanoan and Arawak are to be considered – see Map.

i. Multilateral diffusion in the traditional linguistic area of the Vaupés. This area is known for its institutionalized multilingualism based on language group exogamy: one should marry a person belonging to a different language group. Marrying someone who belongs to the same language group is considered akin to incest and referred to as “this is what dogs do”. Language affiliation is inherited from one’s father, and is a badge of identity for each person (Aikhenvald 2003). Languages spoken in this area include: East-Tucanoan languages – Tucano, Pirapatuya, Wanano, Desano, Tatuyo, Barasana, etc. – and Tariana (Arawak family; Tariana was formerly a dialect continuum, comparable in its diversity to East-Tucanoan languages: see Aikhenvald 2003 and references there). Only East-Tucanoan and Arawak people enter into the intermarriage network. Traditionally, there were no relationships of dominance between language groups (intratribal hierarchies existed within each group and corresponded to dialectal subdivisions).

East-Tucanoan languages are typologically very similar. The ‘East-Tucanoan type’ has developed as a result of a long-term interaction of phenomena of two kinds: genetic affinity and continuous contact. The existing typological similarities can be due to Sapir’s ‘drift’ – whereby genetically related languages tend
Map. Arawak and Tucanoan languages in northwest Amazonia.
to become more similar. But since the East-Tucanoan languages are in continuous contact, it is hard – if not impossible – to distinguish language convergence due to drift from convergence due to a constant contact and gradually arising isomorphism in morphosyntactic structures. However, East-Tucanoan languages are different enough to consider them as separate systems; consequently the diffusion is multilateral (for a discussion of the differences between the East-Tucanoan languages see Barnes 1999, and Waltz 2002). For East-Tucanoan, we have some grammatical descriptions and reconstructions; and comparisons with West-Tucanoan (I am also relying on some of my own field data).

The analysis of contact-induced changes in Tariana (Arawak) is facilitated by our knowledge of closely related languages spoken outside the Vaupés proper – Baniwa/Kurripako to the north (most information comes from my fieldwork).

ii. One-to-one language contact between Yucuna (North Arawak) and Retuarã/Tanimuca (Central Tucanoan). The two groups live in the region of the rivers Apaporis and Miriti-paraná, south of the Vaupés area. In the past they were in close contact. There is no evidence of any dominance relationships. There is little bilingualism at present, and no linguistic exogamy. The main source for Yucuna is a grammar by Schauer and Schauer (1978), and for Retuarã – Strom (1992).

Both (i) and (ii) represent well established long-term language contact situations of completed change (cf. Tsitsipis 1998:34). Ideally, we ought to consider the ways in which areal diffusion affected every aspect of the languages in contact (see Aikhenvald 2003). Here I will concentrate just on the areas where Tucanoan and Arawak languages diverge most: prefixing and suffixing in marking grammatical relations and possession.

4. Prefixing, suffixing and marking grammatical relations in Tucanoan and in Arawak

The functions of prefixes and suffixes in marking grammatical relations in Proto-Tucanoan and in Proto-Arawak are contrasted in Table 1. Convergence between the languages goes in the direction of bridging these differences.

In East-Tucanoan languages, pronominal suffixes to the verb cross-reference the subject, A and S. The person system is based on an opposition between third person animate – which further distinguishes nonfeminine animate singular, feminine animate singular, and animate plural – and the rest (covering other persons and numbers plus third person inanimate); a similar system is found in West-Tucanoan languages (cf. Cook & Criswell 1993), and is reconstructible for
Language contact and language change in Amazonia

Table 1. Proto-Tucanoan and Proto-Arawak: a comparison

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Proto-Tucanoan</th>
<th>Proto-Arawak</th>
</tr>
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<tbody>
<tr>
<td>Prefixing/suffixing</td>
<td>suffixing</td>
<td>prefixing and suffixing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>prefixes: A=S, = possessor;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>relative ka-, negative ma-;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>suffixes: other categories</td>
</tr>
<tr>
<td>Accusative/ergative</td>
<td>strictly nominative/accusative</td>
<td>active/stative: A=S; O=S</td>
</tr>
<tr>
<td>Person system in verbal</td>
<td>third animate/the rest; with</td>
<td>first, second, third in both</td>
</tr>
<tr>
<td>cross-referencing</td>
<td>third singular masc, third</td>
<td>numbers; impersonal, indefinite</td>
</tr>
<tr>
<td></td>
<td>singular fem; and third plural</td>
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Table 2. Free personal pronouns in Tucano, Wanano and Desano

<table>
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<th>Tucano</th>
<th>Wanano</th>
<th>Desano</th>
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<tr>
<td>1sg</td>
<td>yi'̈i</td>
<td>yi'̈i</td>
<td>yi'̈i</td>
</tr>
<tr>
<td>2sg</td>
<td>mú'̈i</td>
<td>mú'̈i</td>
<td>b'̈i</td>
</tr>
<tr>
<td>3sg (animate and inanimate)</td>
<td>k'̈i</td>
<td>tiro</td>
<td>igo</td>
</tr>
<tr>
<td>3sgf</td>
<td>ko'̈o</td>
<td>tico'̈o</td>
<td>igo</td>
</tr>
<tr>
<td>1pl exclusive (we without you)</td>
<td>̊isá'̈</td>
<td>sá</td>
<td>̊gia</td>
</tr>
<tr>
<td>1pl inclusive (we with you)</td>
<td>mari</td>
<td>mari</td>
<td>bárt</td>
</tr>
<tr>
<td>2pl</td>
<td>misá</td>
<td>misa</td>
<td>bá</td>
</tr>
<tr>
<td>3pl</td>
<td>na'̈a</td>
<td>tina</td>
<td>trá/erá</td>
</tr>
</tbody>
</table>

proto-Tucanoan. Thus, in Desano a form *era-bó* (arrive-nonthird.past.vis) can mean “I arrived, we (inclusive or exclusive) arrived, you (sg) arrived, you (pl) arrived, (it) arrived”. The form *era-bó* means “she arrived”, *era-bó* is “he arrived”, and *era-bó* is “they arrived” (Miller 1999:64–65). Overt personal pronouns – or, more frequently, the context – are crucial for determining who did what. Also see Barnes (1999).

Free pronouns distinguish first, second, third person in two numbers, and also two genders in third person singular, and inclusive and exclusive in first person plural. Pronouns in three East-Tucanoan languages are given in Table 2. In contrast, most Arawak languages, including Baniwa and Piapoco, are of split-S (active-stative) type, with grammatical relations marked with cross-referencing. (This system goes back to proto-Arawak.) Prefixes are used for cross-referencing A/Sa, for possessor on inalienably possessed nouns, and for arguments of adpositions. Suffixes (or enclitics) are used to cross reference O/Sa.

Prefixes in Tariana, given in Table 3, cross-reference A and Sa, while Sa and O have no marking. That is, in Tariana *nu-dana* means “I write (something)”, *nu-eku* means “I run”, *nu-pitana* means “my name”, and *nu-api* means “with me”. An
### Table 3. Cross-referencing prefixes and personal pronouns in Tariana (compared to Baniwa and to Proto Arawak)

<table>
<thead>
<tr>
<th></th>
<th>Tariana</th>
<th>Baniwa</th>
<th>Proto-Arawak</th>
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<tr>
<td></td>
<td>prefixes: A/Sₙ; free</td>
<td>prefixes: A/Sₙ; enditics S₀=O</td>
<td>prefixes: A/Sₙ; suffixes S₀=O</td>
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<td>possessor</td>
<td>pronouns</td>
<td>possessor</td>
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<td>1sg</td>
<td>nu-</td>
<td>nuha, nhua*</td>
<td>nu-</td>
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<td>2sg</td>
<td>pi-</td>
<td>piha, phia*</td>
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<td>3sgnf</td>
<td>di-</td>
<td>diha</td>
<td>ri-</td>
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<td>du-</td>
<td>duha</td>
<td>əu-</td>
</tr>
<tr>
<td>1pl</td>
<td>wa-</td>
<td>waha, wha*</td>
<td>wa-</td>
</tr>
<tr>
<td>2pl</td>
<td>i-</td>
<td>iha, thyai*</td>
<td>i-</td>
</tr>
<tr>
<td>3pl</td>
<td>na-</td>
<td>naha</td>
<td>na-</td>
</tr>
<tr>
<td>Impersonal</td>
<td>pa-</td>
<td>paha</td>
<td>pa-</td>
</tr>
<tr>
<td>Indefinite</td>
<td>i-</td>
<td>-</td>
<td>i-</td>
</tr>
</tbody>
</table>

Cliticized pronouns in Tariana are marked with an asterisk (*).
example of a stative S_o verb with no prefix is *kecu “be angry”, e.g. *nuha *kecu-*ka (I be.angry-rec.p.vis) “I am angry”.

Tariana is far from unique among Arawak languages in having lost the cross-referencing suffixes; this also happened in Bare and in Resígaro (Aikhenvald 1999). These could be an independent development and not necessarily contact-induced. As in other Arawak languages, the A/S_o prefixes also mark possessor and the argument of postpositions. Baniwa must have innovated first and second person singular and plural and third person plural pronominal suffixes (which come from personal pronouns); the etymology for Baniwa third person singular suffixes was discussed in Aikhenvald (1999) and (2001).

In their independent personal pronouns, both Tariana and Baniwa distinguish two numbers, singular and plural; there are four persons in singular – first, second, third, and fourth, or impersonal; and three in plural – first, second and third. Masculine and feminine genders are distinguished in third person singular. Personal pronouns in all Arawak languages historically consisted of a combination of a prefix with an emphatic particle -*ha, -ti, etc.

Verbal cross-referencing suffixes in East-Tucanoan languages are fused with tense-evidentiality markers; the actual morphemes vary from language to language.

The following example illustrates the structural isomorphism between Tariana and Tucano, as a representative of East-Tucanoan languages. Glosses for categories which are not matching are in bold.

(1) a. Tucano Diporó-pí-re ni’ki masi
    Tariana payape-se-nuku paita nauki long.ago-loc-top.non.a/s one.cl:human person
    Tucano età-wtí a’tó-ré.
    Tariana di-uka-na a÷i-nuku.
    “A long time ago a man arrived here.”

b. Tucano età, yi’i-re boka-wtí.
    Tariana di-uka muha-nuku di-keta-na.
    “He arrived and found me.”

The contact-induced changes go along the following lines.

i. The changes in the multilateral diffusion area of the Vaupés involve (A) development of a new series of verbal cross-referencing enclitics in Tariana;
and (B) development of verbal cross-referencing proclitics in East-Tucanoan languages.

(A). A new series of verbal cross-referencing enclitics in Tariana. Both in Tariana and in East-Tucanoan languages, personal pronouns in any function tend to precede the predicate. In Tariana a non-third person pronoun in subject (A/S) function can be repeated, or 'doubled', before and after the predicate. The second occurrence of the (clitic) pronoun cannot be marked for the focussed-subject case; it is cliticized to the predicate; that is, it forms one phonological word with the predicate, takes a secondary stress and appears in a shortened form (marked with an asterisk in Table 3). Other constituents can intervene between the first occurrence of the pronoun and the predicate, but not between the predicate and the second occurrence.

The repeated pronoun construction occurs when the pronominalized subject is contrastive. The doubled pronoun is in A function in (2), in Sₐ function in (3) and in Sₒ function in (4). They are used by all generations, including the most traditional speakers of Tariana.

(2) *nuha i-na nu-kalite-ka=nhuà.*
  *I 2PL-OBJ 1SG-tell-REC.PVIS=I*
  “I have told you.” (you have to listen to me)

(3) *祐! waha wa-ñale-mhade wa:=whà.*
  *oh! we 1PL-disappear-FUT.UNCERT 1PL.go=we*
  “Oh! We will disappear.” (we thought the evil spirit would)

(4) *piha inacu mañaite-naka=phià.*
  *you woman good+NCLANIM-PRES.VIS=you*
  “You are a nice woman.”

These ‘doubling’ constructions are reminiscent of East-Tucanoan cross-referencing patterns in the following ways. Firstly, East-Tucanoan languages employ suffixes for cross-referencing. The ‘doubled’ pronouns are enclitics which form one phonological and grammatical word with the predicate. They occupy the last slot in the string of enclitics.

Secondly, East-Tucanoan cross-referencing is based on an opposition between third person animate – for which two genders in singular and a separate plural form are distinguished – and ‘everything else’. The ‘doubling’ construction in Tariana displays a similar opposition between non-third person (for which the doubling construction is allowed) versus third person (for which it is not permitted). The third person pronoun *diha* in Tariana is very rarely used to refer to inanimate referents; as a consequence, the non-third person category in Tariana enclitics dif-
fers from that in East-Tucanoan languages in that it does not include third person inanimate referents.

These structural similarities suggest that the ‘doubling’ construction has arisen as the result of diffusion from East-Tucanoan languages. It is absent from other North Arawak language (including the ones closely related to Tariana).

The third/nonthird person-based pronoun doubling in Tariana coexists with the pronominal prefixes. The East-Tucanoan type structure is an alternative technique employed if the pronominal subject is in focus.

Developing a new, areally diffused, cross-referencing technique involves some restructuring of the grammatical word: the appearance of another enclitic slot for an A/S pronoun. Thus, areal diffusion resulted in adding to the grammatical complexity of Tariana.

The development of a new cross-referencing enclitic series has another, system-altering, consequence. Cross-referencing in the vast majority of Arawak languages operates on an active-stative basis. Tariana prefixing is no exception to this. But the new cross-referencing enclitics operate on a nominative-accusative basis, just like in East-Tucanoan. In other words, the diffusional impact is responsible for a gradual change in marking grammatical relations.

(B) A new series of verbal cross-referencing proclitics in East-Tucanoan languages. This process illustrates ‘adaptation’ of the East-Tucanoan type to the Arawak-type cross-referencing system. In Wanano, a focussed personal pronoun appears in a stressed form (listed in Table 2), as in (5) (Waltz & Waltz 1997:72–74). The pronoun may precede the predicate, as in (5), or follow it (similar examples can be found in Tucano).

(5) yhíh nu-co ta-co ni-ja.  
I feed-nonthird.fem.sg come-nonthird.fem.sg aux-pres.vis  
I am coming to feed (him)."

Any pronoun (in subject function) can be procliticized, as in (6). The full form of the pronoun “I” is yhíh, as in Table 2, and in (5).

(6) yi=wisia wahcã to-pi...  
I(cliticized)=get.lost start there-loc  
"I was starting to get lost there..."

Pronominal proclitics are not found in West-Tucanoan.

A ‘pronoun’ doubling structure occurs in (7), a continuation of (6); this is somewhat similar to the Tariana examples (2)–(4) above. This structure occurs when a backgrounded participant who does something unexpected is focussed on.
The development of cross-referencing proclitics in East-Tucanoan languages does not result in the loss of cross-referencing suffixes. Similarly to Tariana cross-referencing enclitics, the proclitics simply add a new, discourse-determined, dimension to the grammar. Just like in Tariana, areal diffusion results in the enrichment of grammatical means for pragmatic purposes. The system-altering consequence of the proclitics consists in the introduction of a first, second and third person system into the verbal structure.

In summary, Tariana did not lose its Arawak active-stative characteristics; nor did East-Tucanoan languages lose Tucanoan nominative-accusative properties. The multilateral diffusion resulted in mutual enrichment and in the development of additional complexities.

ii. The contact-induced completed changes in one-to-one language contact between Yucuna (North Arawak) and Retuarã (Central Tucanoan) involve developing very similar, 'compromised', structures.

Retuarã has subject prefixes with a first, second and third person distinction in two numbers, from erstwhile cliticized personal pronouns. These are cognates to East-Tucanoan (see Table 2), except for the inanimate marker whose origin is not clear. The first person exclusive form is a combination of first person singular yi- and -ha (of unclear origin); the same morpheme -ha (nasalized because of its proximity to a nasal vowel in bi "second person singular") appears in the second person plural. The first person exclusive form bã- is related to the first person inclusive ma-/bã- (Table 2).

Yucuna preserves Proto-Arawak subject prefixes (see Table 3). The suffixes can be traced to proto-Arawak (Table 2; feminine singular -yo is the reflex of proto-Arawak *-mr; see Aikhenvald 1999). In both languages, prefixes are used when there is no subject NP.

Both languages also have suffixes marking agreement in gender and number with the overt subject NP (any person). That is, in Retuarã the old Tucanoan third/nonthird person distinction has become reanalyzed as simple gender-number marking. Yucuna reanalyzed and reinterpreted the old Arawak third person Ss/O suffixes, making them similar to Retuarã. The two systems are contrasted in Table 4.

In (8), from Yucuna (Schauer and Schauer 1978:41–42), the subject – not expressed by an overt NP – is cross-referenced on the verb.
Table 4. Cross-referencing prefixes in Retuarã and in Yucuna

<table>
<thead>
<tr>
<th></th>
<th>Retuarã (Central Tucanoan)</th>
<th>Yucuna (North Arawak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>prefixes: A/S if</td>
<td>suffixes if no subject NP</td>
<td>prefixes: A/S if no</td>
</tr>
<tr>
<td>subject NP</td>
<td>subject NP</td>
<td>subject NP</td>
</tr>
<tr>
<td>1sg</td>
<td>yi-</td>
<td>nu-</td>
</tr>
<tr>
<td>2sg</td>
<td>b̌i</td>
<td>pi-</td>
</tr>
<tr>
<td>3sgnf</td>
<td>ki-</td>
<td>ri-</td>
</tr>
<tr>
<td>3sgf</td>
<td>ka-</td>
<td>ru-</td>
</tr>
<tr>
<td>3sginan</td>
<td>sa-</td>
<td>&lt;none&gt;</td>
</tr>
<tr>
<td>1pl incl</td>
<td>yiha-</td>
<td>-</td>
</tr>
<tr>
<td>1pl excl</td>
<td>b̌a-</td>
<td>wa-</td>
</tr>
<tr>
<td>2pl</td>
<td>b̌iȟa-</td>
<td>i-</td>
</tr>
<tr>
<td>3pl</td>
<td>dã-</td>
<td>na-</td>
</tr>
</tbody>
</table>

Yucuna

(8) r-ero’ó jimichi.
3sgnf-tear grass
“He is tearing the grass.”

In (9) there is an overt subject NP and the verb takes just a gender agreement suffix.

(9) Juan jero’o-ri Jimichi.
John tear-masc grass
“John is tearing the grass.”

In (10), from Retuarã (Strom 1992:35), the masculine suffix agrees in gender with the overt subject “I” of the first clause, “I say”. No first person prefix is used on the verb “say” since the subject is expressed with an NP. The second person singular prefix cross-references the subject of the second clause (clauses are in square brackets) – this subject is not expressed with a full NP.

Retuarã

(10) [yiʔi a-y̌a-ka] [b̌i-iba-be]
I say-pres-masc 2sg-be/live-impv
“(I man say, ‘Live (with him)!’)”

In summary, Retuarã developed an Arawak-like prefix system which distinguishes first, second and third persons; the third person suffixes were reanalysed as gender-number markers. Yucuna, in turn, became fully nominative accusative; it employs the suffixes in exactly the same way as Retuarã. The incompatibility between an overt subject NP and full cross-referencing is another feature common to Arawak languages and atypical for Tucanoan. I have shown elsewhere (Aikhenvald 1999)
how a number of Arawak languages either suppress their cross-referencing markers, or employ an indefinite prefix (see Table 3) if there is an overt subject NP, e.g. Achagua ſu-wu-da (3sgf-sit-caus) “she puts”, Juani ſu-wu (John want) “John wants”. Baniwa and Tariana do not suppress cross-referencing; they employ the indefinite prefix, e.g. Baniwa nu-aku (1sg-speak) “I speak”, João i-aku (John indf-speak) “John speaks”.

The structures in the two languages are not fully isomorphic. Retuarã preserves the common Tucanoan opposition of inclusive and exclusive, and there is a special form for third singular inanimate which is absent from Yucuna. Otherwise, similarities are striking: both languages have matching prefixing and suffixing marking of grammatical relations, and prefixes and suffixes do not co-occur in one word. However, the levelling of sharp typological differences between a North Arawak and a Tucanoan language did not result either in complete isomorphism, or in the complete loss of one system in favour of the other. A new system arose – atypical from both Arawak and Tucanoan viewpoints.

5. Outcomes of language contact: discussion

We have investigated two kinds of contact situations between Arawak and Tucanoan languages resulting in the emergence of varied structural similarities in erstwhile typologically different systems. In both cases the amount of direct diffusion (that is, borrowing of forms) is negligible. Contact-induced changes in the Tucanoan languages are contrasted to Proto-Tucanoan and to Common North Arawak in Table 5. Contact-induced changes in Arawak languages, compared with Proto-Tucanoan, are in Table 6. (Areally diffused phenomena are in bold).

The languages are becoming more like each other. But the results of ‘convergence’ are different for each group.

In the case of multilateral diffusion without any relationship of dominance, convergence of patterns (see §2) has resulted in mutual enrichment and adoption of a new typological profile alongside the original one. In the Vaupés area, Tariana, the Arawak language, acquires cross-referencing subject enclitics on an East-Tucanoan type third/nonthird person basis. These enclitics coexist with the inherited five-person prefix system on an active/stative basis. The distribution of the two patterns depends on discourse parameters. East-Tucanoan languages have acquired first, second and third person proclitics, alongside the inherited third/nonthird person system marked by suffixes. Along similar lines, East-Tucanoan languages have developed possessive proclitics which coexist with original possession-marking techniques. And Tariana now has possessed classifiers, as
Table 5. Contact-induced changes in Tucanoan languages, compared with Common North Arawak

<table>
<thead>
<tr>
<th></th>
<th>Proto-Tucanoan</th>
<th>Retuarã</th>
<th>East-Tucanoan of the Vaupés</th>
<th>Common North Arawak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-referencing</td>
<td>suffixing</td>
<td>prefixing and suffixing</td>
<td>suffixing; proclitics</td>
<td>prefixing</td>
</tr>
<tr>
<td>Person distinctions</td>
<td>third animate/the rest</td>
<td>first, second, third in both numbers</td>
<td>nonthird/third; with third singular masc, third singular fem; and third plural</td>
<td>first, second, third in both numbers; impersonal, indefinite</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>first, second, third in both numbers in proclitics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Common North Arawak</td>
<td>Yucuna</td>
<td>Tariana</td>
<td>Proto-Tucanoan</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------</td>
<td>-----------------</td>
<td>--------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Cross-referencing</td>
<td>prefixing</td>
<td>prefixing and suffixing</td>
<td>prefixing; enclitics</td>
<td>suffixing</td>
</tr>
<tr>
<td>Person distinctions</td>
<td>first, second, third in both numbers; impersonal, indefinite</td>
<td>first, second, third in both numbers</td>
<td>first, second, third in both numbers; impersonal, indefinite</td>
<td>third animate/the rest</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>third-non-third in enclitics</td>
</tr>
</tbody>
</table>
Table 7. Two situations of Tucanoan-Arawak language contact: a comparison

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Tariana (Arawak) vs East-Tucanoan</th>
<th>Yucuna (Arawak) vs Retuarã (Tucanoan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. relationship of dominance</td>
<td>no</td>
<td>none</td>
</tr>
<tr>
<td>b. source of diffusion</td>
<td>not always clear</td>
<td>clear</td>
</tr>
<tr>
<td>c. direction of diffusion</td>
<td>multilateral</td>
<td>multilateral</td>
</tr>
<tr>
<td>d. relative age of contact</td>
<td>old</td>
<td>old</td>
</tr>
<tr>
<td>e. gain or loss</td>
<td>gain</td>
<td>gain</td>
</tr>
<tr>
<td>f. kind of convergence</td>
<td>keeping Arawak and Tucanoan charact</td>
<td>creating 'common ground' atypical for both Arawak and Tucano</td>
</tr>
<tr>
<td>g. language attrition</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

Languages in contact have become structurally similar without losing their differences; they are also becoming more synthetic, and gain in structural complexity. These structural changes can be seen in just about every grammatical category – including number, gender, systems of demonstratives, case-marking, evidentiality, aspect and so on. Isomorphism of syntactic organization of Tariana and Tucano was illustrated in (1).

Convergence in a one-to-one contact situation without dominance resulted in creating a ‘common ground’ for Retuarã (Tucanoan) and Yucuna (Arawak). Retuarã has gained an Arawak-type cross-referencing prefix and reanalyzed its Tucanoan suffixes as gender-number agreement markers. Yucuna has become fully nominative-accusative, keeping suffixes just to mark gender-number agreement. In possession marking, Retuarã gained Arawak-type prefixes, and lost Tucanoan-type possessive classifiers.

Languages in contact have become structurally similar – but not identical. Structurally, their grammars are neither fully Arawak nor fully Tucanoan. In both cases language contact involved a considerable gain of categories, bridging the apparent structural ‘incompatibility’ of Tucanoan and Arawak, albeit in different ways.

The outcomes of the two kinds of language contact situations are summarized in Table 7.

In all these cases, areal diffusion accounts for the varied ways in which grammars can become structurally ‘compatible’. The result is complex – but hardly ‘redundant’ – structures.
A final note on the current linguistic situation in the Vaupés is in order. A one-to-one language contact situation between modern Tariana – a minority language in the Brazilian Vaupés – and the dominant Tucano language involves convergence of a different kind. I mentioned at the beginning of this paper that one-to-one language contact with dominance results in rapid change (within one generation) and leads to a considerable loss of patterns; this may move the language towards obsolescence. Tariana simply tends to lose structures which have no equivalent in Tucano – one such example is the indefinite prefix. Other categories are reanalyzed to accord with Tucano patterns; for instance, the impersonal prefix and pronoun acquire the meaning of first person inclusive “us (including you)”. Convergence here involves potentially full isomorphism and adoption of another language’s structure at the expense of one’s own. All this goes together with the endangerment and gradual death of Tariana.

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANIM</td>
<td>animate</td>
</tr>
<tr>
<td>CAUS</td>
<td>causative</td>
</tr>
<tr>
<td>CL</td>
<td>classifier</td>
</tr>
<tr>
<td>fem, FEM</td>
<td>feminine</td>
</tr>
<tr>
<td>FUT</td>
<td>future</td>
</tr>
<tr>
<td>FUT.UNCERT</td>
<td>uncertain future</td>
</tr>
<tr>
<td>IMPV</td>
<td>imperative</td>
</tr>
<tr>
<td>INDF</td>
<td>indefinite</td>
</tr>
<tr>
<td>INS</td>
<td>instrumental</td>
</tr>
<tr>
<td>LOC</td>
<td>locative</td>
</tr>
<tr>
<td>masc, MASC</td>
<td>masculine</td>
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<tr>
<td>NCL</td>
<td>noun class</td>
</tr>
<tr>
<td>anim</td>
<td>nonf, NF</td>
</tr>
<tr>
<td>caus</td>
<td>nonthird</td>
</tr>
<tr>
<td>cl</td>
<td>object</td>
</tr>
<tr>
<td>fem</td>
<td>plural</td>
</tr>
<tr>
<td>fut</td>
<td>possessive</td>
</tr>
<tr>
<td>FUT.UNCERT</td>
<td>present</td>
</tr>
<tr>
<td>IMPV</td>
<td>present nonvisual</td>
</tr>
<tr>
<td>INDF</td>
<td>present visual</td>
</tr>
<tr>
<td>INS</td>
<td>recent past visual</td>
</tr>
<tr>
<td>LOC</td>
<td>remote past visual</td>
</tr>
<tr>
<td>masc</td>
<td>singular</td>
</tr>
<tr>
<td>NCL</td>
<td>topical nonsubject</td>
</tr>
</tbody>
</table>

References


Grammaticalization and the historical development of the genitive in Mainland Scandinavian

John Ole Askedal
University of Oslo

1. Preliminaries

The topic of the present paper is the development and grammatical status of the genitive case in modern Mainland Scandinavian, cf. for instance Norwegian (1), as compared with Old Norse:

(1) forfatterens nye bok
"the author’s new book"

In particular, I shall deal with recent contentions (Norde 1997, 2001) that the development of the modern so-called ‘s-genitive’ in Swedish (and in the other Mainland Scandinavian languages) constitutes a case of ‘degrammaticalization’ – “Perhaps the most illustrative example of degrammaticalization in Germanic” according to Norde (2001:247). In what follows, I shall argue that this is not the case, and that Norde’s characterization of the development of the Swedish and Scandinavian s-genitive is probably due to a typologically too narrow conception of inflection and grammaticalization. I shall also maintain that, from a functional point of view, the development of the s-genitive does not run counter to the “Unidirectionality Hypothesis” of grammaticalization theory (cf. Norde 2001:231).

As I shall be dealing with the s-genitive both as a morphological and as a syntactic phenomenon, I wish to point out that there is a certain ambiguity pertaining to the term ‘s-genitive’. This term may, first, be taken in a purely morphological sense, to denote the s-morpheme, and, second, by ‘s-genitive’ one may also mean the Noun Phrase (NP), i.e. the syntactic constituent including the s-morpheme. This distinction between ‘s-ending’ and ‘NP with s-ending’ should be kept in mind
when discussing the grammatical status of the modern $s$-genitive and its historical development.

2. The historical development of genitive morphology

As one may easily ascertain from any handbook of Old Norse, the Old Norse genitive was a case of the common Indo-European type, displaying a fair amount of declensionally conditioned allomorphic variation and fusional characteristics. Compare the examples in (2) (where I do not try to keep apart stem-formation elements and grammatical endings proper):

(2) Singular of nouns: arm-$s$ “arm’s”, hirð-$is$ “shepherd’s”, man-$z$ “man’s”, nið-$s$/nið-$jar$ “relative’s”, dróttning-$ar$ “queen’s”, gr-$var$ “arrow’s”, foð-$r$ “father’s”, sqg-$u$ “saga’s”, merk-$r$ “mark’s”

Singular/Plural of nouns: grann-$a$ “neighbour’s/neighbours”

Plural of nouns: arm-$a$ “arms”, hjart-$na$ “hearts”, foð-$ra$ “fathers”

Pronouns: tveggja “two’s”; mín “mine”, okkar “you two’s”, vár “ours”; etc.

In the present-day languages, all this variation has been replaced by one single $s$-morpheme which is universally combinable with all kinds of NPs, including most pronouns. The only exceptions are the 1st and 2nd p.sg. and the 1st p.pl. personal pronouns which have inflecting adjectival modifiers instead (3d). The overall distribution of the $s$-genitive and adjectival possessive determiners is illustrated in (3) (Norwegian examples):

(3) Non-genitive noun/NP/pronoun – Corresponding genitive/possessive determiner

a. dronningen “the queen” – dronningens “the queen’s” (etc.)
b. dronningen av Danmark “the queen of Denmark” – dronningens av Danmarks (etc.)
c. 3.p.sg.m. han "he" – hans "his"
   3.p.sg.f. hun “she” – hennes "hers"
   3.p.sg.c.g. den "it" – dens "its"
   3.p.sg.n. det "it" – dets "its"
   3.p.pl. de “they” – deres "their"
   2.p.pl. dere "you" – deres "your"
d. 1.p.sg. jeg "I" – (min/mitt/mine "my")
   2.p.sg. du “you” – (din/ditt/dine "your")
   1.p.pl. vi “we” – (vår/vårt/våre “our")
(3b) illustrates the possibility that the s-genitive may also be adjoined to syntactic phrases (complex NPs). When Jespersen (1894:317 f.) speaks of the “inseparableness” of the “previous flexional” genitive in contrast to the separableness of the new s-genitive, it should be noted that the new s-genitive is as inseparable from the NP to which it belongs as is its fusional ancestor to word stems.

According to Norde (2001:247), the morphological status of the s-genitive in the contemporary Germanic languages is that of “phrase-final clitic” and it is discussed under the heading “From inflection to clitic”. From this wording, it seems to follow that inflection cannot be clitical and that if something is a clitic, it cannot also be an an inflectional element and, by implication, it cannot be an affix. These assumptions correspond to the commonly assumed grammaticalization cline in (4) (Hopper & Traugott 1993:7):

(4) content item (lexeme) > grammatical word > clitic > inflectional affix

The clitic status of the s-ending is in fact debatable. Clitics commonly derive from existing words of which they form combinatorial variants and as such they conform to the phonotactic rules of the language. Neither is the case with the Scandinavian s-genitive. It does not derive historically from a word but from a grammatical ending, nor does it seem to have been associated with pronominal genitive forms (cf. Norde 2001:255). Synchronically, there exist no word or words of which the s-morpheme might be assumed to form a combinatorial variant. It shows no tendency to develop into an independent word and its phonological shape (-s) contradicts the phonotactic rules of modern Scandinavian, which do not allow for words consisting of one consonantal phoneme only (in contrast with e.g. Russian, cf. s “with”, v “in”). Its alleged clitic status can only be saved by assigning it to a special class of clitics as ‘bound words’ that have no non-clitic counterpart (cf. Zwicky 1984 and, with regard to the Norwegian s-genitive, Johannessen 1989:129). However, it is not evident that such bound words can be readily distinguished from affixes.

The analysis of the -s element as a clitic is thus hardly compelling. In a typological perspective, it might equally well be considered an agglutinating affix. The following facts seem to support the analysis of the s-genitive as an agglutinating grammatical morpheme (cf. Plank 1999:282 f., whose terminology is applied in the following statements):

i. It is morphologically “invariant”, as it is subject to no declensional variation.
ii. It is categorically uniform and “expressed distinctly” as it encodes one and only one inflectional category.
iii. It is never “expressed by zero exponents”.
iv. It is “local” in the sense that “the expression of [the genitive] category is syntagmatically confined to a single affix”.

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iii. It is never “expressed by zero exponents”.
iv. It is “local” in the sense that “the expression of [the genitive] category is syntagmatically confined to a single affix”.
v. It is clearly "segmentable" and forms a "transparent" morphological structure.
vi. Its "phonological cohesion" with the stem to which it is adjoined is "loose".
vii. Similarly, its "morphological bonding" is loose; in addition to being "word-marking" it is also "phrase-marking". One may add that no concordial rules apply one way or the other as the genitive is marked only once within the NP (cf. Norde 2001:247 ff.).
viii. In contrast to, e.g., Turkish number and case affixes, it is, however, not accessible to "repetition in one and the same word".

From this it follows that the s-ending fulfills most of the prototypical agglutination criteria assumed by Plank (1999). The natural conclusion seems to be that the modern Mainland Scandinavian genitive represents agglutinative, non-fusional inflection. Compare in this connection (5) as a general model of different typological strategies and techniques for marking grammatical (i.e. grammaticalized) categories and relations:

(5) General coding strategies:

<table>
<thead>
<tr>
<th></th>
<th>analyticity/isolation</th>
<th>syntheticity/inflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>(without inflectional morphemes); techniques:</td>
<td>a. ordering restrictions words</td>
<td>b. auxiliary c. agglutination d. fusion e. introflexion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(using inflectional morphemes); techniques:</td>
</tr>
</tbody>
</table>

It should be noted that inflection is here used as a superordinate concept, not as the counterpart of agglutination, which I prefer to call fusion.

Within the terminological framework in (5), the development of the genitive in the modern Scandinavian languages at large can be described as follows: In Icelandic, the fusional genitive has been retained in about the same manner as in Old Norse (Kress 1982). In Swedish, Danish and Norwegian Riksmål/Bokmål, the fusional genitive has been replaced by the consistently agglutinative s-genitive, but in these languages functionally equivalent Prepositional Phrases (PPs) are also more or less common. Modern Faroese has certain relics of the fusional genitive, but no generalized s-genitive (Hamre 1961). Instead, functionally equivalent PPs are in general use. Modern so-called New-Norwegian (‘Nynorsk’) has a small number of relic fusional genitives (cf. the personal pronouns hennar “her”, deira “their” and the phraseologically isolated form dess “its” in til dess “until that time”), occasionally also shows some use of the s-genitive, possibly under Riksmål/Bokmål influence, but more often uses PPs (6a) or an analytic construction borrowed from Middle Low German (6b) (cf. Torp 1992):
Grammaticalization and the historical development of the genitive

In general terms, there has thus in the Scandinavian languages been a development in the domain of genitive marking (in a broad functional sense) comprising techniques in (5) in the following fashion (7a):

(7) a. fusion \rightarrow agglutination \rightarrow auxiliary words (preposition in PPs)

This overall picture is at variance with common conceptions of the cyclic nature of typological developments (cf. Campbell 1995:1146; Vennemann 1974:371). Traditional typology and grammaticalization theory concur in assuming that auxiliary words turn into agglutinating particles (or “clitics”) which through a process of phonological attrition are transformed into fusional morphemes which may then disappear in consequence of further phonological attrition, thereby giving rise to new analytical means of expression, etc. Cf. (7b):

b. auxiliary words \rightarrow agglutination \rightarrow fusion

As shown, the development of the Norse fusional genitive goes in the opposite direction in Mainland Scandinavian. The common motivating factor behind the development from fusional to agglutinating morpheme summarized in (7a) – and manifesting itself in different ways in the individual languages (with the sole exception of Icelandic) – is presumably a trend towards more categorial marking transparency. This is to be expected in connection with a general typological drift from a more synthetic toward a more analytic language structure.

3. The historical development of genitive functions

Before jumping to the conclusion that the agglutination (“cliticization”) pattern dealt with in the preceding section constitutes a case of degrammaticalization, one should first take a closer look at the functions of the NP with the agglutinating (so-called “clitic”) -element, in particular, whether its present functions represent a continuation of all, or a subset of, the uses of the former genitive. The radical morphological simplification of genitive marking described in Section 2 is in fact paralleled by an equally radical reduction of the syntactic functions of the genitive.

In Old Norse, the genitive occurred with the following syntactic functions (cf. Nygaard 1905:128–154, which is also the source of examples (8)–(13)):
(A) Modifier to a noun:

(8) þræll konungs
    "the king's slave"

(B) Genitive object governed by a verb:

(9) freista má ek þess
    "I can try that"

(C) Genitive object governed by an adjective:

(10) Ólafr var þess ekki fjótr
    "Olaf was not quick at that"

(D) Predicative with copular verb:

(11) var sú lítillar ættar
    "she was of modest descent"

(E) Adjunct with verbs:

(12) Emundr lögmaðr reið í brott gærdags
    "Emund the lawman road away yesterday"

(F) Object of prepositions:

(13) eininhvern dag fór Sigmundr til eyjarinnar Dimun
    "one day Sigmund went to the island Dimun"

Of these various functions only (A) and (F) remain in modern Mainland Scandinavian. The modern continuation of function (F), as in (14), constitutes a kind of phraseological pattern:

(14) a. (ligge/gå) til sengs "(lie) in bed/(go) to bed"
    (sitte/gå, sette seg) til bords "(sit) down at the table"
    (dra/befinne) seg til skogs "(go) into, (be) in the wood"
    b. (befinne seg) til havs "(be) at sea"
    (bevege seg) til lands og til vanms "(move) on land and in the water"
    c. (gå) til bums "(sink) to the bottom"
    (gå) til vêrs "(go) up in the air"
    (gå) til alters "(go) to the altar"
    d. ta til bens "run away"
    sette til veggs "drive one into a corner"

This pattern is subject to a number of specific constraints (cf. e.g. Knudsen 1967:97 f.).
i. It is only found with the preposition til.
ii. It is morphologically restricted to indefinite nouns.
iii. The nouns in question have some sort of concrete, non-abstract meaning.
iv. The resulting locutions have some sort of locational meaning but differ with regard to directionality vs. non-directionality: some are in this respect ambiguous (14a); some are only non-directional (14b); others are only directional (14c); and in certain further cases which are more strongly idiomatic, it is hard to make a distinction between directional and non-directional meaning (14d).
v. The special phraseological or idiomatic nature of the PP constructions in (14) clearly indicate that they are a special case with no bearing on the overall characterization of the modern Mainland Scandinavian genitive.

Of the Old Norse genitive functions (A)–(F), only (A) remains as a productive syntactic pattern in modern Mainland Scandinavian. Thus, the morphological genitive in modern Mainland Scandinavian is in important respects more uniform than its Old Norse source:

i. As stated in Section 2, its morphematic realization is now uniformly -s.
ii. Its productive use is restricted to that of a noun modifier.
iii. The head of the modifier is no longer restricted to single nouns, but may also be a complex NP with internal syntactic structure.

In sum, two main changes have taken place:

i. With regard to morphology, the fusional genitive of Old Norse has developed into an agglutinating element whose scope has been broadened from nominal stems to full NPs.
ii. In a syntactic perspective, from being a both structurally and lexically assigned case in Old Norse (cf. Norde 1997:145–183), the genitive has turned into a purely structural case as noun modifier (cf. Norde 1997:9). (Examples like (14) in fact confirm this overall picture by virtue of their phraseological and idiomatic character.)

The development of the s-ending from part of a fusional allomorphic system to agglutination is an example of typological restructuring of inflection.

4. Degrammaticalization or increased grammaticalization?

The question we now have to address is whether the above findings justify considering the development of the Mainland Scandinavian s-genitive an example of ‘degrammaticalization’, as assumed by Norde (1997:1 et passim; 2001). As pointed out by Norde (1997:1 ff.), this would be a rather conspicuous result, given the tra-
ditional assumption of the unidirectionality of grammaticalization processes (cf. e.g. Heine et al. 1991: 4, with references; Heine 1993: 27; Ramat 1992: 549, with references to Talmy Givón, Nigel Vincent, Ronald Langacker, Theodora Bynon and Christian Lehmann; Hopper & Traugott 1993: 7; Norde 2001: 231), along the cline in (4) (cf. Norde 1997: 8). According to the accepted theory in the field, ‘degrammaticalization’ thus more or less appears to be a contradiction in terms and was until fairly recently not widely discussed in the literature on grammaticalization. For instance, it is not used by Hopper & Traugott (1993) or by Hagege (1993), and it does not occur as an entry in Bußmann (1990). In Heine et al. (1991: 4), ‘degrammaticalization’ is defined as “[reversal of] grammaticalization […], that is, […] a more grammatical unit develops into a less grammatical one”, but no examples are given. In any case, Heine et al. (1991: 5) consider degrammaticalization to be a “statistically insignificant” phenomenon and state that many alleged cases are due to “inadequate analysis”. Lehmann (1995: 16–19) discusses a number of putative instances of degrammaticalization but concludes the discussion “with the observation that no cogent examples have been found” (1995: 19). Ramat (1992: 549), on the other hand, argues that degrammaticalization phenomena “really exist and that they are caused by a very basic principle of linguistic functions”. However, his examples are hardly convincing; they all concern word formation, not grammatical categories or morphemes in the proper sense. For example, the suffix English *ism*, Norwegian *isme*, German *Ismus* (pl. die *Ismen*) does not represent a grammatical category; its isolation as an independent word (with lexical meaning!) is not an instance of “degrammaticalization” in any precise sense. Ramat’s (1992: 551) use of the word “degrammaticalization” to denote loss of grammatical category is obviously no more than an instance of terminological equivocation. The not too uncommon conversion of a grammatical element into a lexeme (*ich* – das *Ich*, *tu* – *tutoyer*) clearly belongs in the domain of lexicalization and should not be conflated with degrammaticalization (whatever that may be.) Hence it is also not in any obvious sense a “counter-directional change” but simply word formation (cf. Norde 2001: 235, 237).

The scepticism associated with ‘degrammaticalization’ in the literature does not of course mean that it cannot at all exist, but it does indicate that one should not expect to find too many convincing cases.

Norde’s use of the term ‘degrammaticalization’ is more in the spirit of Lightfoot (1979: 223–225) who applies it to changes occurring in connection with transition from synthetic to analytic structure (a view which is rightly criticized in Lehmann 1995: 19). Arguably, this implies a view of analytic grammatical structures and languages that does not do justice to their typological characteristics.

Is, then, the development of the Mainland Scandinavian *s*-genitive one of the presumably very rare examples of degrammaticalization? We may first note that of all the original Old Norse functions, only two remain, these being the use as a noun
modifier and the use as an object of prepositions, the rest having been discarded. Of the two remaining functions, only the former is productive whereas the latter is vestigially present in a syntactically and lexically highly constrained phraseological pattern (cf. (14)). What we do find, is a high degree of grammatical, morpho-syntactic specialization in the sense that the number of syntactic environments in which the genitive occurs has been reduced to only one (disregarding again the vestigial use after preposition).

When thus measuring up the development of the $s$-genitive, the result is not evidence of degrammaticalization, but rather of increasing grammaticalization. As stated earlier, another, more specific way of characterizing this whole development is to say that the lexically conditioned uses of the genitive have been discarded in favour of one dominant structurally conditioned function, with the use after the preposition til “to” as a merely vestigial exception.

There is another piece of morpho-syntactic evidence, pertaining to linearization changes, to corroborate the general conclusion that the development of the $s$-genitive is an instance of increasing grammaticalization toward structural assignment.

In Old Norse, the genitive was used both as a post- and a pre-nominal modifier:

(15) a. þrœll konungs
    “the king’s slave”
 b. allra Svía þing
    “all Swedes’ thing [parliament]”

In Modern Norwegian and Mainland Scandinavian it is only used as a pre-nominal modifier:

(16) a. kongens trell
    “the king’s slave”
 b. alle svenskers ting
    “all Swedes' thing [parliament]”

Normally, this modern prenominal genitive cannot co-occur with the pre-nominal lexical definite article and it precludes the use of the so-called ‘suffixal definite article’ (or rather definiteness suffix):

(17) a. (*den) husets nye eier(*en)
    “the new owner of the house”

Like other determiners, the prenominal genitive requires the weak form of a following adjective. Cf. the weak form $ny$ in (17a) vs. the strong form $ny$ in (17b):

b. husets *ny eier
The restriction against combinability with the pre-nominal definite article and the definiteness suffix illustrated in (17a) holds with most syntactico-semantic subtypes of the s-genitive but certain purely qualifying s-genitives side with adjectives in this respect and follow determiners. Still, even these genitives preclude the use of the suffixal article:

(18)  
*denne gamle fredens mann(*en)
"this old man of peace"

These facts indicate that the genitive, at least in cases like (16)–(17), has been assigned to the determiner position in NPs as a result of categorial reanalysis. Furthermore, it seems natural to interpret this conflation with the determiner class as a diagnostic of increasing grammaticalization, as determiners are commonly considered a fairly highly grammaticalized class of elements. In (18), the genitive behaves more like a regular qualifying adjective so that its position may considered as due to some sort of lexicalization process.

The general conclusion is, then, that the s-genitive morpheme has been further grammaticalized but that not all s-genitive NPs behave equally consistently as a member of the grammatical class of determiners, cf. (18).

5. Summary

The transformation of the modern Mainland Scandinavian s-ending into an agglutinating morpheme represents typological restructuring of inflection. This development is typologically natural in connection with an overall drift from a more synthetic to a more analytic language structure insofar as it provides for more coding transparency. In this context, one may refer to Christian Lehmann's (1995:19–21) concept of “renovation” which means that certain expressions replace others in connection with transition from typological syntheticty to analyticy (cf., e.g., new analytical expressions for future, perfect, passive, comparison of adjectives in various European languages). Lehmann (1995:20) makes the following interesting statement:

"For degrammaticalization to obtain, analytical forms would have to be the continuants of synthetic forms; but this actually never happens."

It seems that the s-genitive in Mainland Scandinavian is an example of a synthetic inflectional element that moves from fusion to agglutination, thereby approaching analyticity. A morphologically uniform agglutinating (“clitic”) element (-s) which may be adjoined to the last linear constituent of a complex syntactic phrase, regardless of the head or modifier status of this constituent, occupies an interesting intermediate position between a fusional and a purely analytical structure. The fre-
sequent use of functionally equivalent PPs can then be understood as a further move in the direction of analyticity.

Notes

1. For a discussion of a different view of the English s-genitive, connecting it with the pronominal genitive form his/ys, cf. Norde (2001: 254 f.).
2. Cf. also the instructive discussion in Plank (1995) which does not, however, deal with the Scandinavian genitive.
4. The syntagmatically independent use of the genitive in cases like ballen var guttens is not a continuation of the predicative genitive, but an example of co-referential head deletion, i.e. to be derived from ballen var guttens ball with possessive genitive by a synchronically productive rule.
5. Further references to recent discussions of degrammaticalization are given by, e.g., Norde (2001) but the works in question do not seem to add much substantially new to the topic. Convincing examples of degrammaticalization phenomena remain extremely rare.

References

Beyond the comparative method?

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1. Introduction

We have several 20th century cases of proposed family relationships which were at first disputed but later became fully established, such as Uto-Aztecan (Sapir 1913–1919), Algonquian-Ritwan (Sapir 1913; Goddard 1975; Haas 1958; Teeter 1964), Otomanguean (cf. Swadesh 1960; Rensch 1976:1–5), and the demonstrations that Hittite (better said Anatolian) and Venetic are Indo-European (cf. Hrozný 1915, 1917; Beeler 1949), among others. All these proposals were initially controversial, but in time doubt disappeared. Taking a lesson from these cases, we can reasonably anticipate that some additional new genetic relationships will be demonstrated in the future. More to the point, though, all these cases of remote family relationships were demonstrated by the comparative method. Nevertheless, a number of scholars have recently expressed dissatisfaction with perceived limitations of the traditional method. For example, Johanna Nichols (1996:267) says, “since the tried-and-true Neogrammian comparative method can only reach back a few thousand years before the evidence fades out, something else must be tried.” Such limitations frustrate some scholars who want to see further back in time than the method allows and so they have proposed new techniques. The question is, do these new proposals work? The goal of the paper is to evaluate recent attempts to get at more remote linguistic history. In particular, I concentrate on three approaches because they have received considerable attention, in part from linguists but also from scholars in other fields: Joseph Greenberg’s multilateral comparison (considered in less detail here), Johanna Nichols’s program, and R.M.W. Dixon’s punctuated equilibrium. These approaches have in common dissatisfaction with the comparative method and the goal of attempting to see beyond its assumed limitations. Given their impact, it is important to determine to what extent these approaches may succeed in their goal.
From time to time it is important for disciplines to take stock of themselves. The history and classification of languages are matters of keen interest among both linguists and members of the public, but only adequate methods help us to work out this history; inadequate approaches just waste efforts and detract from attaining the goal. Therefore, an evaluation which identifies ineffective and misleading procedures and in so doing focuses attention on effective methods can contribute significantly in the long run to the success of the enterprise, forestalling wasted energy in false directions and directing efforts along productive paths. To anticipate the conclusion of this paper, I find that the approaches discussed here have serious shortcomings; they do not see beyond the comparative method.

2. To believe or not to believe?

Even among those who profess faith in the comparative method for determining genetic relationships there are conservatives and liberals (often labelled ‘splitters’ and ‘lumpers’). Splitters are not against new cases of genetic relationship, but rather their demands for evidence are high. Lumpers tend to be more generous with the evidence, often willing to embrace hypothesized distant genetic relationships when the evidence is only suggestive but not conclusive. Paul Newman defends this position:

The job of the comparative linguist is to provide the best explanation possible consistent with the facts. In proposing a classification, it is not necessary that the linguist ‘prove’ that the classification is absolutely certain by the presentation of conclusive evidence . . . the linguist is justified in postulating a genetic relationship even if the evidence is still somewhat on the weak side. For example, in the opinion of some scholars, the evidence supporting the relationship between the Chadic language family and other language groups in the Afroasiatic phylum, such as Semitic and Berber, is not compelling. Nevertheless, some points of resemblance in morphology and lexicon are so striking that if one did not assume relationship, they would be impossible to explain away. The classification of Chadic within Afroasiatic is thus fully justified, not because it has been ‘proved’ as in a court of law, but because it is the explanation most consistent with the facts as a whole (2000:260–261).

Actually, both views have a place (see Campbell 1997a:208). In early stages of the investigation or when the goal is to call attention to the possibility of a relationship, it is appropriate to cast a wide net and consider as possible evidence any similarities that turn up. However, when the goal is to satisfy sceptics or to test these initial proposals, then the rough-and-ready evidence gathered in the initial scouting stage must be submitted to more careful scrutiny.
Beyond the comparative method?

It is not that the lumpers typically take “the position that all languages should be treated as unrelated unless and until proved otherwise,” as Newman (2000:260) suggests. It is rather a matter of the burden of proof: to make a case for genetic relationship based on certain data, one needs to show that shared inheritance from a common ancestor is stronger than any other possible explanations of these data, e.g. borrowing, chance, onomatopoeia and sound symbolism, nursery forms, etc. Thus, in effect, by standard methodology, languages are unrelated until proven otherwise. By the same token, if we were investigating a claim that certain similarities are due to borrowing, we would have to show that the proposed borrowing explanation accounts for the data better than other potential explanations, including the possibility that the similarities might be due to a (perhaps undetected) genetic relationship. It is thus not a question of assuming the languages are guilty of unrelatedness until proven otherwise, it is a matter of meeting one’s burden of proof, pure and simple.

A stance on traditional methods that allows the conclusion of genetic relatedness before other possible explanations of the evidence have been considered and discounted will not be convincing. The Altaic, Nostratic, Austro, Dene-Caucasian and several other hypothesized distant genetic relationships are of this sort – they are not able to rule out other accounts of the evidence as perhaps more compelling.

Taking burden of proof seriously is not a matter of choice, but is just built into the rules of the game. Some would change these rules; others would abandon them. I turn first briefly to what is perhaps the best known approach which would modify the rules – Greenberg’s multilateral comparison.

3. Multilateral comparison

Joseph Greenberg’s (1987) method of multilateral (or mass) comparison has been weighed and rejected by most mainstream historical linguists (see Adelaar 1989; Berman 1992; Callaghan 1991; Campbell 1988, 1997a; Hock 1993; Matisoff 1990; McMahon & McMahon 1995; Poser 1992; Rankin 1992; Ringe 1992, 1993, 1996; Thomason 1993; Watkins 1990), so it is not necessary to repeat the arguments against it here. Rather, I will present a brief demonstration that it does not work in practical application. The method is based on lexical look-alikes determined by visual inspection, “looking at . . . many languages across a few words” rather than “at a few languages across many words” (Greenberg 1987:23), where the lexical similarity shared “across many languages” alone is taken as evidence of genetic relationship. Where Greenberg stops – after determining superficial lexical similarity – is where traditional approaches begin: the resemblances must still be investigated to determine whether they are due to inheritance from a common ancestor (as
Greenberg believes) or to borrowing, accident, onomatopoeia, sound symbolism, nursery formations, and so on. Since multilateral comparison does not take this necessary next step, the results frequently have proven erroneous. Even within the study of Indo-European, scholars are wary of vocabulary similarities as evidence for grouping. Meillet and Leskien taught us “that the number of watertight etymologies is small, and that the possibility of borrowing is great” (Clackson 1994:4). No technique which relies solely on inspectional similarities has proven adequate for supporting relationships:

It is widely believed that, when accompanied by lists of the corresponding sounds, a moderate number of lexical similarities is sufficient to demonstrate a linguistic relationship … However, … the criteria which have usually been considered necessary for a good etymology are very strict, even though there may seem to be a high a priori probability of relationship when similar words in languages known to be related are compared. In the case of lexical comparisons it is necessary to account for the whole word in the descendant languages, not just an arbitrarily segmented ‘root’, and the reconstructed ancestral form must be a complete word … The greater the number of descendant languages attesting a form, and the greater the number of comparable phonemes in it, the more likely it is that the etymology is a sound one and the resemblances not merely the result of chance. A lexical similarity between only two languages is generally considered insufficiently supported, unless the match is very exact both phonologically and semantically, and it is rare that a match of only one or two phonemes is persuasive. If the meanings of the forms compared differ, then there must be an explicit hypothesis about how the meaning has changed in the various cases. Now, if these strict criteria have been found necessary for etymologies within known linguistic families, it is obvious that much stricter criteria must be applied to word-comparisons between languages whose relationship is in question.

(Goddard 1975:254–255)

In the following, I compare Old Japanese forms from Miller 1971 (symbolized in the citations as Mi OJ), Martin 1987 (signalled as Ma OJ), and Unger 1977 (shown as U EJ, for ‘Early Japanese’) with a sample of twenty ‘Amerind’ forms from Greenberg 1987 (cf. Ruhlen 1994). (For a longer list and details see Campbell 1997b.) This comparison shows that Japanese fits Greenberg’s Amerind lexical sets extremely well. Thus, if multilateral comparison were accepted, Japanese would be an ‘Amerind’ language. Or put more precisely, the method of multilateral comparison is insufficient to distinguish Japanese (and other languages) from the American Indian languages and families. For Greenberg’s lexical sets, I list first some of his forms which show the phonetic similarity to the Japanese forms compared, and then I list many of the glosses found among the words in the so-called ‘etymology,’ beginning with Greenberg’s primary gloss for the set.¹ (Abbreviations:
Beyond the comparative method?

Gr = Greenberg 1987 for ‘Amerind’, Ma = Martin, Mi = Miller, OJ = Old Japanese, U EJ = Unger (Early Japanese), R = Ruhlen 1994.)

(1) Mi OJ koköro “heart”, U EJ kokoro “heart”; Ma OJ kokoro “heart”
Gr: kulu, k'ar, kene, -kekin, kuany, etc.; “breast, heart, belly, milk, chest, middle, body, in front” (p. 198–199 #50)

(2) Ma OJ hara < fara < *para “belly”; Mi OJ fara “stomach”
Gr: para, prara, pure, pari, par, purua, purua, pil, paru, panhe, bulu, pan, balla, par, p'acx, etc.; “belly, chest, heart, liver, lungs” (p. 191 #30), R palin “belly” (p. 130)

(3) Ma OJ muna “breast”
Gr: munia, monu, manate, mangu, mono, monwo, etc.; “breast, chest, milk” (p. 79 #7; cf. p. 147 #26), R mana (p. 131)

(4) Ma OJ ti < *ti[y] < *tu-Ci “milk”; Ma OJ tita “breasts, milk” (cf. U EJ sup < “cupV “suck”)
Gr: i čič, ču, ču čič; “breast, teat” (p. 134 #25, p. 147 #25)

(5) Mi OJ mĩ, Ma OJ mi < myī < *mi-Ci “body”
Gr: me, imi, aem, eim, eme, uma; “body, animal” (p. 197 #44)

(6) U EJ kata “side”, Ma OJ kata- “side, one side (of two)”
Gr: kate, kida, kis; “side, rib” (p. 119 #172)

(7) Ma OJ ti “blood”
Gr: di, du, ěts, ate, iččě, es, issiš, jeu, don?; “blood, bleed” (p. 94 #12)

(8) Mi OJ kẽ “hair”
Gr: ke, iki, ki, kai, k'ol, tsi, jǐ, (n)(h)k"i, etc.; “hair, down, head; hair, beard, feather, root” (p. 69 #56, p. 96 #45, p. 127 #35, p. 229 #136)

(9) Mi OJ te “hand”; Ma OJ te < *te[y] < *ta-Ci “hand” (cf. Ma OJ i-tu “five”)
Gr: tei, ti, ta, to, utu, etc.; “hand, bring, give, take, carry, with the hand” (p. 230–231 #139)

(10) Ma OJ migi “right (hand)”
Gr: imak, ami, hemik, megeh, e-me, maka, ma, min, mane, maki, muk, imik, ami, ani, etc.; “hand, right hand, left hand, give, take, bring, palm, branch, finger, carry, five”, etc. (p. 229–230 #137)

(11) Ma OJ asi “foot”
Gr: asi, ěš, ise, si, sijar, asu, ?asī, etc.; “foot, leg, knee, kick, tread”

(12) Ma OJ ha < fa < *pa “tooth”
Gr: i-pe, opī; “tooth” (p. 98 #93), R pe (p. 152)
(13) Ma OJ *po-po “cheek” (> fofo > hoo, hoho)
   Gr: paxo, faṣo, ipepo; “cheek” (p. 79 #9); Gr: pʰok, bege; “cheek” (p. 134 #28); R poke, pako (p. 132)
(14) Ma OJ agi < agyi < “anki “jaw, gill”; U EJ agi- “jaw”
   Gr: ak, aka, ekeke, hek, ai, jako, jego, jenku, tiiko, e-ka, akwa, etc.; “mouth, jaw, chin, lips, border, lip” (p. 246 #192)
   Gr: aki, akke, atsi; “breathe” (p. 68 #15), R (p. 132)
(16) Ma OJ *kapo “face” (> kafo > kao)
   Gr: kapu-, kapa-ka, kap, a-kibaux; “eye, eyebrow” (p. 112 #64, cf. #65)
(17) Ma OJ ma(-), me “eye”
   Gr: ñeme, (me-)mi, mwa, (vi-)mo, tha-iimi; “forehead, face” (p. 80 #22), R imi “forehead” (p. 138); Gr: vi-nimi-ši, tha-njemi; “eye, forehead”
    (p. 80 #19)
(18) Ma OJ kubi < kubyi < *kunpi “neck, head”
   Gr: ku, inkio, k’oa, k’e, k’uji, ikio, ka(n), etc.; “neck, throat” (p. 247 #196), R k’oe “neck” (p. 145)
(19) Ma OJ ka “hair”, ke (< key < “ka-Ci) “hair”
   Gr: ka, ke, iki, ki, kek, kai, etc.; “hair, head, down”
    (p. 69 #56), R kai (p. 139)
(20) Ma OJ *pina - kwo “penis” (> fenoko > henoko); Ma OJ huguri < *punkuri “testicle, scrotum”
   Gr: enpen, opengo, hapwé, wi-pinši; “penis” (p. 81 #48), R pen (p. 146);
Gr: ba, paki, ka-moesses, si-mase; “testicle, egg, yoke, penis” (p. 261–262 #253); Gr: pehej, pue, -bi’e, iipx; “egg, testicle” (p. 135 #47); R pak “testicle” (p. 151)

I have compared Japanese forms with examples which Greenberg has taken from American Indian languages in the same way that he compared forms from various Native American languages to one another. This reveals numerous similarities shared by Japanese and putative Amerind languages, including pronouns, basic vocabulary items, and some morphological comparisons. Therefore, it must be concluded either that (1) Japanese is an Amerind language, or (2) there is something seriously wrong with this method of attempting to determine genetic relationships. In this case, the Japanese forms fit into Greenberg’s lexical sets in such a way that Japanese cannot be distinguished from the various Native American languages that are compared. In fact, Japanese forms are found to match ‘Amerind’ sets with greater frequency than those from any individual American Indian lan-
language treated by Greenberg – Japanese is more Amerind than any other Amerind language! In short, since Japanese is not an Amerind language but cannot be distinguished from other putative Amerind languages by multilateral comparison, the method proves to be inadequate for determining genetic relationships.

I now turn to approaches which question the comparative method and the traditional rules of the game, and would replace them with new approaches.

4. Nichols

Johanna Nichols (1990, 1992, 1993, 1995, 1997) aims to get beyond the comparative method, which she believes can only reach back a few thousand years, fading out at around 6000 to 8000 years ago (Nichols 1996:267, 1997:363). Given enough change in related languages over a long period of time, such a small amount of shared inherited material may remain that it is impossible to tell whether there was a genetic connection. Her approach is based on a sample with one language representative for each of some 200 ‘lineages’ from the some 250 to 300 existing ‘lineages’ (families and isolates). Her complex approach, largely statistical and geographical, is inspired by population studies in biology and genetics. She tries to find ties among language populations and to gauge the relative age of linguistic traits in large-scale geographical areas; she tries to infer the source and direction of spread of these structural features, and also to infer how the languages involved came to have their geographical distributions. She believes her approach can reach back much earlier in time than the comparative method can, but it does not trace descent, as the comparative method does (cf. Nichols 1997:365).

Key units of Nichols’ analysis are descent lineages [genetic units], areal groupings [geographical areas], and typological classes [traits]. The complex associations among these units of analysis, statistically determined, are impressive, but involve an intersection of assumptions which are not demonstrated, and which depend crucially upon each other. On the one hand, these concepts rest on shaky empirical foundations, and on the other hand, several are misapplied in Nichols’ sample of languages. These misassignments become part of the overall measurements upon which her claims and conclusions about prehistory depend – a “multiplication of uncertainties” (Nettle 1999b:3326). I begin by identifying problems involving some of these key units.

4.1 ‘Spread’ vs. ‘accretion’ zones problems

Important in Nichols’ analysis are spread zones and accretion zones:

An accretion zone (termed residual zone in previous works …) is an area where genetic and structural diversity of languages are high and increase
over time through immigration. Examples are the Caucasus, the Himalayas, the Ethiopian highlands and the northern Rift Valley, California, the Pacific Northwest of North America, Amazonia, northern Australia, and of course New Guinea. Languages appear to move into these areas more often than they move out of them.

A spread zone is an area of low density where a single language or family occupies a large range, and where diversity does not build up with immigration but is reduced by language shift and language spreading.

(Nichols 1992: 231, 1997: 369)

4.1.1 Misassignment of ‘zone’ status

This distinction is central in Nichols’ work, but it is misapplied in some instances. For example, she treats Mesoamerica as a ‘spread zone,’ but by her own criteria (Nichols 1992: 16–17) it is a residual (accretion) zone; it has: (1) Lots of linguistic diversity, not the low genetic diversity characteristic of spread zones. (2) Lots of structural diversity, as opposed to the low structural diversity for spread zones. (3) The language families are not shallow, with Otomanguean calculated glottochronologically at 6,400 BP, Uto-Aztecan at 5,000 BP, and Mayan at 4200 BP.2 (4) In opposition to rapid spread wiping out existing families, Mesoamerican families stay in place and rarely replaced other languages or took over anyone else’s territory. (5) Contrary to Nichols’ criteria, there was no widespread lingua franca in Mesoamerica.3 In short, Mesoamerica definitely conforms more to Nichols’ definition of an accretion/residual zone, not a spread zone. Mesoamerica is not the only one of Nichols’ zones for which the status of ‘spread’ or ‘accretion (residual)’ is questionable (for discussion of the others, see Campbell and Poser forthcoming). This misassignment is serious. Since Nichols (1992) deals with only five spread zones (and five residual zones), with even one of five misassigned (20%), all the counts involving these zones are seriously skewed.

4.1.2 Problems of language representatives

Some other problems have to do with the geographic and linguistic composition of Nichols’ areal groupings. In Nichols’ treatment of Mesoamerica, of ten languages (Nichols 1992, only nine languages in Nichols 1995: 342) that she places in the zone, two (Chichimec, Miskito) fall outside Mesoamerica both geographically and in terms of the linguistic traits that define the area. For example, both are SOV languages, while Mesoamerican languages typically lack SOV basic word order (Campbell, Kaufman, and Smith-Stark 1986). Chichimec is located beyond the linguistic and cultural boundary of Mesoamerica to the north, Miskito outside to the south. Given that Nichols’ Mesoamerica combines some non-Mesoamerican languages (20% of the 1992 total, 22.2% of the 1995 figure) with true Mesoamerican languages, all of her calculations concerning spread, stability, and the general char-
acter and distribution of linguistic traits in this area are skewed. 4 (For problems with others of Nichols’ zones, see Campbell and Poser in preparation.)

4.1.3 The double-dipping problem
A different kind of problem has to do with the classification of the languages chosen as representatives of Nichols’ zones. In Mesoamerica, two languages of only ten (20% of the total) are from the same language family – Chichimec and Mixtec are both Otomanguean. Nichols’ (1992:291) Europe zone (a spread zone) includes Hungarian and Zyrian [Zyrien], two Finno-Ugric languages, so that of only six languages representing the Europe zone, two (33%) are from the same language family. Moreover, both Hungarian and Zyrien underwent heavy influence from Turkic, from the Central Eurasian spread zone, whose languages typologically are different from those of Europe. Other doublings of more than one genetically related language as representatives of a single zone include (1) for the North American zone: Luiseño, Southern Paiute, and Papago, all from the Northern branch of Uto-Aztecan; and (2) English, French, Russian, and Armenian (all Indo-European languages) for Northern Eurasia.5

This creates a serious problem for defining the ‘zone.’ If only unrelated languages are considered, then any sharing of traits across languages of the zone may reflect diffusion but not inheritance from an earlier common ancestor. However, when multiple genetically related languages are admitted, some of the sharing of traits encountered may be due to inheritance, not to the diffusion which should define the area. To count the related languages as independent witnesses of the areal nature of the trait with equal status to the other unrelated languages representing the zone makes this trait seem more widely shared for areal rather than genetic reasons than it really is. In order not to skew the results, each family deserves only one vote for each trait used in the definition of the zone.

4.1.4 Do spread zones (and accretion zones) really exist?
Nichols (1992:291) has four spread zones: Ancient Near East, Europe, Central Australia, and Interior North America (Mesoamerica, a residual zone, is eliminated from the list). They are very different from one another and this raises doubts about the concept of spread zone. The Ancient Near East is a recognized linguistic area (Friedrich 1975, Diakonof 1990). It has considerable genetic diversity, a number of unrelated language families and isolates. Central (and southern) Australia is different, with but a single widespread language family, Pama-Nyungan. As for Europe, it would appear that in later work (e.g. Nichols 1997, 1998) it is considered more the recipient of impact from the Eurasian zone than a proper zone of its own. In any event, Europe is unlike the previous two, just a collection of six languages from across Europe (three Indo-European, two Finno-Ugric), perhaps thrown to-
gether on the basis of some more or less arbitrary geographical decision – they share no set of diffused traits that would mark them as a linguistic area (as the Ancient Near East), nor is there any indication of great spread of languages across the zone. The Interior North America zone appears even more arbitrary. It contains two members of the Northeast Linguistic Area (Seneca, Cree), four from the Plains Linguistic Area (Lakota, Pawnee, Kiowa, Tonkawa), one from the Plateau Linguistic Area (Kutenai), with supporting help from Navajo (Southwest) (cf. Campbell 1997a:331–344). There is nothing in the linguistics, anthropology, or geography that suggests these languages ought to be grouped together. They have nothing in common (except absence of coastline). Interior North America is no clear match for the definition of a spread zone: “an area of low density where a single language or family occupies a large range, and where diversity does not to build up with immigration but is reduced by language shift and language spreading.” True, there is less diversity than along the West Coast, but even in Nichols’ sample eight different ‘stocks’ are represented here, twice as many as for two of her five residual zones – Ethiopia-Kenya with 4 (5 with the supplement) and Caucasus with 4 (Nichols 1992:290–291).

In later work the most conspicuous spread zone mentioned is “the grasslands of central Eurasia,” with a few other added: northern Africa and the Great Basin of the western United States (Nichols 1997). The Great Basin is also well known as a linguistic area (Campbell 1997a:338–339). I do not know what languages she would assign to northern Africa, though I would suspect the spread of Arabic is involved, reflecting historical political forces rather than any principle of spread-zone formation. (Otherwise, the Berber, Egyptian, and Semitic languages of the area share areal traits and some typological traits and are generally held to be members of the single Afroasiatic ‘phylum.’) In several of her cases (from 1992 and later), the common assumption that spread zones reflect large migrations that reduce former diversity is not necessarily what we see.

In short, there are so few spread zones, and those identified as such have such disparate characters, it seems reasonable to question whether there is anything of substance to the notion. The putative spread zones that might seem less controversial are the ones which correspond to identified linguistic areas, but the definition of a linguistic area with diffusion across language boundaries, where the best established ones involve a fair amount of genetic diversity (several language families), is different from that of a spread zone, which focuses on few languages widely spread with low genetic diversity. The notion of ‘spread zone’ should be abandoned. For those few instances of putative spread zones which do involve few but widely spread languages, it appears that there is no particular set of linguistic or other factors which unite them; rather, they appear to be mere artifacts of local political and social history, better understood on a case by case basis, as products of contingent history.
It is difficult to see that the notions of spread zone and accretion zone do anything more than restate the facts of language distribution, not explaining it, misleadingly suggesting that there is some underlying explanation, that does not really exist. For residual (accretion) zones, there must always be linguistic diversity, by definition, otherwise they would be mistaken for spread zones or just not be identified at all. Many residual zones nevertheless have some language families which spread widely, behaving more like those thought to be confined to spread zones. For example, in Mesoamerica, a residual zone by Nichols’ criteria, Nahua (Uto-Aztecan, see above) has spread far and wide, from Nayarit to Panama. Similarly, Otomanguean stretches from above the northern Mesoamerican frontier (Chichimec and some Pame varieties) to Nicaragua (Mangue, Subtiaba). However, the other language families of Mesoamerica remain quite localized with very little outward spread. Similarly, while the Pueblo Linguistic Area fits Nichols’ residual zone criteria, it also has incursions into it from the widespread Athabaskan family (Apachean: Navajo and Apache varieties) (Bereznak 1995). In the case of the Kiowa-Tanoan family, while the Tanoan languages illustrate a compact family in the pueblos, Kiowa illustrates just the opposite, spread out from the others. While the Mayan languages seem to have stayed near to home and not to have spread very much, nevertheless Huastec is found separated some 1000 kilometres to the north, though Huastec’s closest sister, Chicomuceltec, separated by only some 1000 years, is found among the other Mayan languages. Thus Huastec seems to suggest a spread while the bulk of Mayan languages exhibit residual zone traits. There are many examples of this sort. At the same time, many spread zones nonetheless have a number of residual pockets of surviving languages, giving linguistic diversity, which Nichols must interpret as the spread zone not yet having completed its business, but which, if historical information were not available about movements and territorial take-overs, could in some cases make it difficult to determine whether a spread zone or residual zone were involved, or perhaps neither. In fact, given that the ‘zones’ Nichols works with are very large, covering continent-sized regions, it is not clear what independent criteria could be brought into the picture to show that the terrain (with the languages) involved is not included on a wholly arbitrary basis.

In sum, the accretion-spread zone distinction is a misleading idealization and should be abandoned.

4.2 Typological ‘stability’

Another key unit in Nichols’ program is the notion of stable traits – “minimally prone to vary in families, hence presumably minimally prone to be borrowed and maximally prone to be inherited”; “stable enough to be usable as indicators of
probable genetic relatedness a step or two beyond the levels the standard comparative method can now reach” (Nichols 1995:339). The structural features which Nichols (1992) assumes are relatively stable include: head/dependent marking, typological alignment (nominative-accusative, ergative, active), morphological complexity, verb position in clauses, inclusive/exclusive, alienable/inalienable, noun classes, numeral classifiers, number neutralization, non-finite verbs, and voice. A serious problem is that there is nothing particularly stable about most of these putatively stable features.

For example, the inclusive vs. exclusive first person pronoun contrast is not stable, but often develops or is lost rapidly and with ease. There are a number of cases where dialects of the same language differ in that some have the contrast and others lack it, where the change is attested as very recent, e.g. some Mam (Mayan) dialects have the contrast, where ‘exclusive’ adds clitic -al-ya, which ‘inclusive’ lacks; other Mam dialects lack the contrast. Warembori (an isolate in Papua New Guinea) borrowed pronouns from Austronesian “with even the inclusive-exclusive distinction being taken over: PAN [Proto-Austronesian] *kami (1PL EXCl) > War[embori] ami; PAN *kita (1PL INCLU) > War ki” (Foley 2000:392). The inclusive/exclusive contrast is typically rather superficial in languages that have it and is not deeply integrated in the fabric of the grammar, meaning there is nothing about it which would lead us to expect long-term ‘stability.’ As Jacobsen points out:

This category [inclusive/exclusive pronominal contrasts] is probably one that diffuses readily, as it is purely semantic and not bound to the syntactic structure of a language in a way that, for example, a category of case would be. It is sometimes found to be typical of a whole language family, but may also turn up in isolated members of a family, as, for example, in Choctaw alone in the Muskogean family . . . in Yuki alone in the Yukian family . . . in Shuswap alone in the Salish family . . . or in Kwakiutl but not Nootka in the Wakashan family (1980: 204).

Notwithstanding, Nichols “turns this one example [inclusive/exclusive opposition as a global cline] into a more general model of the history of diversity” (Nichols 1992:215). However, given the apparent general instability of this feature, the conclusions she derives from its distribution are overstated.

The claim of stability for a number of other traits is also unsupported (see Campbell 1997c, Campbell and Poser forthcoming). If the stability is in question, Nichols’ conclusions based on spread and clustering of these supposedly stable traits and the implications for really far-reaching prehistory derived from them have to be questioned as well.

Connected with the problem of lack of stability for features claimed to be relatively stable is the problem of how these traits are distributed in Nichols’ sample (see Nichols’ 1992:28–33 scatter-chart maps distribution of ‘stable’ features).
For ergativity, for example, in her sample there are only five ergative languages in the Americas (4 in North America, 1 in Mesoamerica, and Ø in South America, though I “possible”). Nevertheless, ergativity is reasonably common in American languages. In North America it is found for example in Kwakwala (Wakashan), Alsea (isolate), Eskimo-Aleut (whole family), Natchez (isolate), and several others. Though Kwakwala (Kwakiutl) has ergativity, Nootka, Nichols’ Wakashan representative, lacks it. Though Nichols’ sample includes Natchez (isolate), it erroneously lists it as a non-ergative language (Nichols 1992:300–301). In spite of Nichols’ sample with no (or possibly one) ergative language in South America, there are numerous ergative language there, e.g., several Cariban languages (Apawaio [Kapong], Arekuna [Pemong], Makushi, Kuikúro, Bakairi), Arawán (family), Je (family), Panoan (family), Tacanan (family), Cavineña and some others Tupi-Guaranian languages, Yanomamán (small family), some Tupian languages (Gavião, Surui, Mekéns), Guató (Macro-Jê), various Chibchan languages, etc. For Mesoamerica Nichols has only one ergative language, Tz’utujil (Mayan) (with Huave listed with “?”), and five nominative/accusative languages. Nevertheless, there are numerous other ergative languages in Mesoamerica. Half the Mixe-Zoquean languages are ergative, but the Mixe variety of Nichols’ sample lacks it. Had she chosen an ergative Mixe–Zoquean representative, ergativity in Mesoamerica would increase 50% (and nominative/accusative decrease 20%), changing significantly the status of ergativity world wide in her calculations. As Nichols (1995:341) says, “there is always the possibility that by accident a language atypical of the family in some respect might be chosen and might therefore make a disproportionate contribution to the family’s profile.” Nichols (1996:268) sees ergativity as “a low-frequency feature with peaks in southwest Asia, Australia, and highland New Guinea. Though more easily lost than gained, ergativity shows good tenacity in those language families that exhibit it.” This does not appear to be the case even in Nichols’ sample. In her sample, ergative languages in families where not all the sister languages are ergative include: Wáigali (Indo-European); Gurung (Sino-Tibetan); Chamorro, Drehu (Austronesian); and Canela-Krahô (Jê) – that is, ergativity developed in some of these or was lost in others, showing it is not an especially stable trait.

Numeral classifiers, another putatively stable trait, figure prominently in Nichols’ discussion. This trait, however, is underrepresented and misassigned in numerous of the languages of her sample, as seen in Chart 1, which compares how she coded languages in her sample for this feature with what these languages actually have.
Chart 1. Nichols’ coding of numeral classifiers vs. actual presence/absence of the trait

<table>
<thead>
<tr>
<th>Nichols’ listing</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haida</td>
<td>?</td>
</tr>
<tr>
<td>Tlingit</td>
<td>?</td>
</tr>
<tr>
<td>Wishram</td>
<td>lacks numeral classifiers</td>
</tr>
<tr>
<td>Karuk</td>
<td>lacks numeral classifiers</td>
</tr>
<tr>
<td>Washo</td>
<td>lacks numeral classifiers</td>
</tr>
<tr>
<td>Cree</td>
<td>lacks numeral classifiers</td>
</tr>
<tr>
<td>Huave</td>
<td>no indication</td>
</tr>
<tr>
<td>Mixtec</td>
<td>lacks numeral classifiers</td>
</tr>
</tbody>
</table>

In South America, of 15 languages in the sample, only 2, Waorani and Yagua, are indicated as having numeral classifiers; but numeral classifiers are found also in, for example: Tucano (Tucanoan); Yucuna, Achagua, Piapoco, Maipure, etc. (Arawakan); Guahibo; Chapahuan; Harakmbet; Bora-Witotoan; Tsafiki (Barba- coan); Munduruku (some other Tupian languages); Chimila (Chibchan). Numeral classifiers are an areal trait of the South Asia (Indian) Linguistic Area; they are found also in Hungarian and Turkic, and in Africa in a few Kegboid languages (Cross River; Benue-Congo), Kana (Cross River), Ejagham, Dongo-ko (Ubangian), and a few Grassfields languages of Cameroon (Aikhenvald 2000:121–124, Creissels 2000:240). This is not a particularly stable trait, and it is not limited to the circum-Pacific area, as Nichols claims.

4.3 Binary splits

Another component of Nichols’ approach is the assertion that most proto-languages, when they diversify, split pair-wise, usually into only two branches (Nichols 1990:489). She says, “I found that the average number of initial branches per stock is 1.4 to 1.6” (Nichols 1994:4). However, this view is not accepted by most historical linguists. Such binary splittings do not happen with enough frequency to permit it to be promoted to a standard upon which various calculations, intertwined with other undemonstrated assumptions, are based. Bellwood (2000, 2001), Nettle (1996, 1999a), and others argue for different kinds of diversification in different environmental settings, for example their “rake-like” families with multiple initial branchings thought to be the results of incursions into previously unoccupied territory or of rapid movement. Nichols’ calculation based on the assumption that the average number of branches is two is just not reliable.8

This is a serious problem when other aspects of Nichols’ program depend on this flawed concept.
4.4 Time depths

Nichols claims further that her (assumed) binary splits will take place on an average of one every 5,000 years – this is an unsupported claim. As Jane Hill (2000: 9) says, “her [Nichols’] assumption that languages diversify and split at a relatively uniform rate is problematic, as such rates can be altered by major cultural innovations and events.” On the basis of these two unsubstantiated claims – binary branching and splits averaging one every 5,000-years – Nichols (1990) calculates the age of human populations, of the first peoplings of continents, of stable vs. unstable typological traits, and of the geographical spread of languages. Nettle (1999a: 120) also criticizes this aspect of Nichols’ program: “Nichols (1990: 503) suggests that stocks multiply linearly with time. The phylogenetic diversity of a linguistic population with no outside influence is thus a function of the time elapsed since that populations started ramifying.” “Data that are ably discussed by Nichols herself in the same paper (1990: 483–489) show that phylogenetic diversity in Eurasia and in Africa has actually been reducing for several millennia. This flatly contradicts any assumption that number of lineages increases linearly with time.” “Thus, if there is a relationship between phylogenetic diversity and time, it is certainly not one of linear increase” (Nettle 1999a: 121). “The data show that there is no tendency for the number of stocks in a continent to increase with time … The most ancient continents have no more stocks than the younger ones” (Nettle 1999b: 336).9

4.5 Problems with the classification of languages and the sample

For any of Nichols’ various calculations to work out, e.g. the number of splits per family/stock, the average age of splits, the time depths of stocks and population movements, etc., it is necessary that the genetic classification of the languages in her sample upon which these counts are based be relatively accurate. However, her sample includes several disputed genetic units, e.g. Hokan and Penutian, (Campbell 1997a: 290–305, 309–320), and Khoisan (Güldemann & Vossen 2000: 99–104; Heine & Nurse 2000: 5; Sands 1998, etc.). There are numerous questionable genetic classifications upon which Nichols (1992) bases further conclusions. Clearly, the misassignments of genetic relationships and the acceptance of disputed genetic proposals affect dramatically the calculation of genetic diversity, whose status is dependent in part on being located in spread zones or accretion/residual zones, which are defined in part based on how much genetic diversity they contain, and so on. To the extent that the genetic classifications are off, everything else in Nichols’ construct will be adversely affected.10

Given these serious problems, Nichols’ approach does not see past the limitations of the comparative method and affords no reliable insights into the remote past.
5. Dixon's approach: punctuated equilibrium

At the heart of Dixon's (1997) approach is the notion of 'punctuated equilibrium', inspired by Eldridge and Gould's (1972) popular notion in biology. Dixon believes that in periods of equilibrium, relative harmony existed among languages of a region and through long-term contact these languages converge "on a common structural prototype" (Dixon 1997:70–71), making classification in terms of language families difficult or impossible; however, events which punctuate the equilibrium (flood, drought; evolution of agriculture; ambitious leaders, aggressive religions, geographical movement, and so on) in this view may lead to language splits appropriate to the family tree model. Dixon says of his approach:

The hypothesis put forward here to describe and explain the development of language during the 100,000 or more years since its first emergence is that there have been long periods of equilibrium during which a number of languages have coexisted – in a more or less harmonious way – within a given region without any major changes taking place. From time to time the state of equilibrium is punctuated by some cataclysmic event; this will engender sweeping changes in the linguistic situation and may trigger a multiple 'split and expansion' (which would be appropriately modelled by a family tree diagram). The punctuation may be due to some natural event (floods, drought, volcanic eruption), or to the emergence of an aggressive political or religious group, or to some striking technical innovation, or simply to entry into new and pristine territory. After the events which caused the punctuation have run their course, a new state of equilibrium will come into being. (1997: 67)

A valuable consequence of Dixon's work is that it draws attention to areal linguistics.

Dixon (1997:28) explains the motivation behind his approach: "A main thesis of this essay [Dixon 1997] is that the family tree model, while appropriate and useful in many circumstances, is not applicable everywhere and cannot explain every type of relationship between languages. We need a more inclusive model, which integrates together the ideas of the family tree and of diffusion area." Mainstream historical linguists would not be opposed to such a statement and in fact would consider it part and parcel of the traditional agenda, which was never limited to only the family tree – borrowing, the wave theory, and later areal linguistics, are taken into account. Moreover, Dixon's (1997:11) "assumption 4", that "in the normal course of linguistic evolution, each language has a single parent," suggests that the family tree model will always be relevant, regardless of whether the application of methods to determine the family tree in given instances is complicated by changes – for example of an areal linguistic nature – which require the use of other historical linguistic techniques for full understanding. Therefore, the mainstream
of historical linguistics would not agree that we need a more inclusive integrative model; they would say we already have one. Where Dixon differs, then, is in the degree of emphasis he places upon areal convergence.

Dixon assumes that during a period of equilibrium, “languages in contact will diffuse features between each other, becoming more and more similar. These similarities will gradually converge, towards a common prototype. We can thus say that language families are rapidly made during a period of punctuation . . . and slowly blurred during the long period of equilibrium . . . that follows” (1997:70–71). This would make classification in terms of language families difficult or impossible.

There are, however, some problems with this conception, to which I now turn.

5.1 The status of punctuated equilibrium in biology

The notion of punctuated equilibrium is challenged in biology. As Dennett (1995) argues, there is nothing special about punctuated equilibrium; evolution continues even without punctuated events disrupting equilibrium. Language change and differentiation into language families also continue in periods of equilibrium (in the absence of disruptive events), as even Dixon (1997:9–70) acknowledges.11

5.2 The view of human society

Another problem has to do with the unrealistic assumptions about social structure and its relation to linguistic change. Dixon sees it this way:

The necessary scenario for a period of equilibrium is a number of groups living in relative harmony with one another, each more or less respecting their neighbours and their neighbours’ ideas and religion, and not trying to foist either themselves or their religion on others. The political groups would have been fairly small in size (ranging from a few hundred to a few thousand) and fairly anarchic in organisation. We can imagine them as being rather like Australian tribes before the white invasion in 1788; or being like some tribes that survive today in the Amazon jungle. There would be no chief, just a number of elders. Decisions on what a village group or a kinship group should do would be reached by consensus, with some senior members of the group guiding the discussion (1997:78).

As Nettle points out, Dixon falls prey to the tendency to portray non-industrial societies as pristine and timeless: “This Rousseauesque picture is anthropologically naive, as a brief reading of Keeley (1996) or Edgerton (1992) will reveal” (1999a:99). Dixon’s view is speculative and anthropologically unrealistic. The ethnographic literature does not support a picture of small-scale non-industrial
societies living in harmony (see, for example, Salzman 1999). Even non-human primates wage war! (cf. Stanford 1998, for example).

This constitutes a serious problem for the notion of equilibrium and its assumed linguistic concomitants. If the social circumstances upon which equilibrium depends for its definition are not of the sort envisaged by Dixon, then the concept fails to have real world support.

5.3 The problem of equilibrium without diffusion

Dixon (1997:70–71) believes that in periods of equilibrium “languages in contact will diffuse features between each other, becoming more and more similar. These similarities will gradually converge. But, in situations of harmonious equilibrium, language contact and linguistic diffusion or convergence are not a necessarily result and do not always take place. Languages in the same area over a long time may exhibit little evidence of contact-induced change, for example Athabaskans of the American Southwest [Navajo, Apache] and their non-Athabaskan neighbors [Hopi, Zuni, Keresan and Tanoan groups]; Eskimoan and Northern Athabaskan. The Hano Tewa (Tanoan language) and Hopi (Uto-Aztecan) share the same very tiny mesa top, yet extremely little borrowing or diffusion has taken place in either language (Kroskity 1993). This is a problem for the model’s expectation that equilibrium gives diffusion.

5.4 The problem of equilibrium with diversification

Not only is diffusion not a necessary outcome of equilibrium, normal change leading to diversification into language families is also not uncommon in such situations, contrary to the expectations of the model. We see cases where under very stable conditions over long periods of time, with no evidence of punctuation, the languages of the region continue to undergone normal change and diversify into families of related languages. Some examples are readily apparent: the Highland Mayan (K’ichean, Mamean subgroups), Zapotec (a complex of more than 25 different languages recently diversified), Eskimoan, Nakh-Daghestanian, Lapp (Saami) languages (a subfamily of Finno-Ugric), etc. In short, a significant number of language families appear to have developed in relative harmony and without punctuation events, as Dixon (1997:9–70) acknowledges.

5.5 Diffusion in punctuation

Linguistic diffusion can be caused by punctuation events and does not take place just in equilibrium. Conquest and political inequality are great promoters of struc-
tural diffusion in languages and examples are so common as scarcely to bear com-
ment. For example, the history of English is mostly that of punctuation, with Scan-
dinavian invasion and the Norman French conquest, but the outcome is more
that envisaged in Dixon’s model for equilibrium states: English assimilated huge
amounts of vocabulary, borrowed sounds and pronouns, and levelled morphosyn-
tactic complexity. The impact of Spanish on the grammar of so many indigenous
languages of Latin America is a direct reflection of the inequality in the status of
the languages involved and the punctuation that brought Spanish domination.
Both forced language contact [punctuation] and peaceful contact [equilibrium]
 can have similar outcomes with respect to diffusion.

Moreover, the formation of linguistic areas and the development of areal phe-
nomena shared across languages of a geographical region, as Hill (1978) shows,
can be brought about as a response to punctuating factors. Groups may join in
areal associations in response to famine, resource failure, war, and catastrophes of
all sorts, structuring human organization at the areal level and helping to main-
tain area-wide systems of adaptation to support “the extensive networks of con-
tact which allow survival of human groups even during periods of locally severe
environmental stress” (Hill 1978:18).12

5.6 Conclusions concerning punctuated equilibrium

It must be concluded, then, that the correlation envisaged by Dixon, which equates
equilibrium with convergence, and punctuation with divergence, is not sup-
ported – both kinds of change take place in both kinds of situations. The notion
provides no real purchase on the questions of remote linguistic history beyond
the reach of traditional methods. The comparative method, areal linguistics and
methods for dealing with borrowing provide the relevant explanations.

6. Conclusions

The three approaches discussed here either reject the comparative method or pro-
pose new techniques to try to see past its limitations in order to get at remoter
linguistic prehistory. Had any of them proven successful in its goals, it would con-
stitute an extremely valuable advance in historical linguistics. Under more careful
scrutiny, however, these approaches turned out to be flawed, both in conception
and in execution. They afford no new insights which are reliable. It is valuable
to take stock in order to eliminate sirens such as these which appear to promise
much, but which ultimately dash our efforts on the rocks and divert us from other
lines of investigation which render more positive results. Indeed, there is still much
work that needs to be done and much to be learned from the application of the traditional techniques, especially the comparative method. May this work move forward.

Notes

1. Since I do not know Japanese or its history, I take no responsibility for the accuracy of the Japanese forms presented here. Rather, they are simply repeated as given in the sources I utilized. This is how Greenberg assembled his Amerind forms. Thus, whether the Japanese data I cite are correct or not is not relevant, so long as the procedure I followed represents an accurate application of Greenberg’s method.

2. In citing these calculations of dates, I do not mean to imply that I accept glottochronology; I do not (see Campbell 1998:177–186).

3. Also, “spread zones are to be expected at high latitudes and in dry and/or seasonal continental interiors, conditions under which population density has generally been low” (Nichols 1998:229), but Mesoamerica is not at a high latitude, not dry nor at a seasonal continental interior, and not low in populations density.

4. Though it is not certain how Nichols’ (1992) Mesoamerica “zone” might be intended to correspond to the well-defined Mesoamerican Linguistic Area, Nichols (1995:342) makes it clear that it is intended to match the language area as identified in the literature.

5. Probably Nichols (1992) would defend the inclusion of the two as members of different “families” though of the same “stock,” with Chichimec and Mixtec as representatives of different “families” in the larger Otomanguean “stock.” This distinction, however, is hardly satisfying. Here members of the same genetic unit (languages known to be genetically related, their “family” status within a “stock” in Nichols’ terminology notwithstanding) are included as representatives of a zone equal to other languages not held to be genetically related. However, in the case of Zyrien and Hungarian (both representatives of Nichols’ Europe zone), the potential solution of members of different families within the stock is not available. By Nichols’ procedures, it should not be possible to select two languages unless each is from a different branch of the initial branching of the “stock”; however, in this case the “stock” level is Uralic, whose initial branches are Finno-Ugric (to which both Hungarian and Zyrien belong) and Samoyed (with no representative). Thus, to get by on the “stock” versus “family” reading, only one of these could be selected, as a member of the Finno-Ugric first-order split.

6. The problem of historical interpretations based on the selection of only one language to represent each lineage in Nichols’ sample is made evident by the criticism of the similar procedure in some human genetic research: “Each allele has its own history . . . Each locus contains multiple alleles and therefore a set of stories. Hence the geneticist’s predilection for ‘populations’; an individual can only reveal part of one story and there is no guarantee that if you sample one individual from each locale that you’ll get parts of the same story. An entire population must be assayed to get a fuller picture of each history” (Hurles in press).
7. In fact, ergativity is also relatively easily gained, as seen in numerous documented cases of grammatical changes that result in ergativity. There are several paths by which a language can become ergative, and by which it can shift from ergative to nominative/accusative or to active alignment (see Harris and Campbell 1995:240–281).

8. In later publications, Nichols seems to agree; she reports that “the number of dialects or daughter languages” in linguistic divergence is not constant, “though whether they are relatively many or few depends on ascertainable cultural and historical factors” (1997:366). “Multiple branching at or near the root of a tree points to abrupt dispersal of the protolanguage in a large spread” (1997:371). This notwithstanding, she nevertheless repeats the earlier view: “The only cross-linguistic survey of branching done so far (Nichols 1990) finds that stocks have, on average, about 1.5 initial branches” (1997:366–367).

9. It is unclear, but Nichols’ view may have shifted in later work: “the rate at which languages diverge into dialects and then daughter languages, and so on, is not constant” . . . “rates of change are accelerated by contact with other languages: the more profound the influence the more rapid the change” (1997:365).

10. There is a serious sampling problem of a different sort. Even if Nichols had a representative from all the some 300 lineages of the world (ca. 250 in Nichols 1990, 1992), correctly classified, there would be a large imbalance in the geographical distribution. The Americas have 180+ independent stocks, 60% of the world’s ca. 300 linguistic genetic units (72% of Nichols’ 250 figure). This geographical imbalance means that the aims of her program would be frustrated.

11. This is not necessarily an argument against the use of punctuated equilibrium in linguistics, but it does add perspective. It is true that possibly the notion could work in linguistics while failing in biology; however, as I argue in this paper, the problems with it detected in biology also hold for its application to languages – namely that changes of both sort, divergence and borrowing, take place both in equilibrium and punctuation.

12. Though not Dixon’s intention, there is a frequent misunderstanding of “convergence” in much recent writing on diversification. For example, from Nettle (1999b:3328) we read: “Dixon claims that stocks can disappear from the linguistic record when extensive diffusion and convergence with neighbouring languages make their distinct origin impossible to detect.” Dixon does not really see languages disappearing by convergence through long-term mutual influence in periods of equilibrium; in fact he actually argues explicitly against such a view (except in extreme conditions): “It is instructive to enquire what the possibilities are for two languages in contact over a very long period of time. Could they conceivably merge? I believe that the answer to this question is ‘no’ . . . All our observation of normal linguistic development suggests that a language never has more than one parent” (Dixon 1997:71). We know from a solid number of well-studied linguistic areas that: (1) typically few diffused structural features are actually found, usually less than a dozen main ones (cf. Campbell 1998:300–306); (2) cases of profound language mixture are basically not found; solid cases of language convergence or mixture are truly rare, and these do not arise through normal mechanisms of borrowing in language contact; rather, invariably they have been the results of extreme social circumstances, the sort generally not found in pre-colonial times (Thomason 1997). (3) In any case, reference to the family membership of the languages is necessary in order to determine the nature and extent of diffusion – you can’t tell if it’s borrowed if
you don’t know where it came from. It is of some concern that several scholars have understood Dixon to mean that wholesale convergence is possible, that so much convergence is possible that the comparative method in no longer valid and whole language families disappear converging with one another. They fail to realize that in documented linguistic areas areal convergence does not lead to language extinction, that such wholesale convergence is not known in real linguistic areas – true, diffused traits across language boundaries can make the task of distinguishing inherited from diffused material very difficult, but the gradual convergence of initially independent languages to the extent of obliteration of language families and making the comparative method inapplicable is not on offer, ever. This being the case, a number of views about these processes in prehistory need to be moderated.

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Beyond the comparative method?


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Beyond the comparative method?


The transition from early to modern Portuguese
An approach from historical sociolinguistics*

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(...) a "teoria da mudança" da Sociolinguística considera que o passado pode informar sobre as variações em curso no presente, da mesma forma que a análise de variação e mudança no presente abre caminhos para uma melhor interpretação de factos do passado.

Rosa Virginia Mattos Silva, Estruturas trecentistas, 16.

1. Introduction

The purpose of this paper is to suggest some points which might help to break up the two traditionally established blocks of Portuguese linguistic history,¹ early and modern Portuguese, into more precisely defined periods. We shall therefore reconstruct four morphological aspects of medieval Portuguese, based on a quantitative study of data from the corpus of documents surviving from the 13th to the early 16th centuries. The aim is to apply to linguistic history some of the principles and methods of current sociolinguistics, pointing to parallel changes in linguistic data and social factors, starting from a descriptive analysis of frequency in different text-types.² The four morphological variables selected are normally considered by scholars as fundamental for any consideration of periods in the history of Portuguese:

a. The numerical-personal morpheme -des in such verb forms as cantades and temedes, and the evolution of this morpheme after the syncope of -d-. In early Portuguese the verb forms of the 2nd person plural ended in the numerical-personal morpheme -des, or -de in the imperative, resulting from the phonetic
change in the Latin suffix -tis or -te. During this period there was a gradual loss of intervocalic d, which would make way for the subsequent assimilatory rules (e.g. temedes > temees). The simplification (‘crasis’) of twin vowels and the formation of the semivowel (temees > temes > temeis or temees > temeis) usually came later, the latter resulting in a form identical to present-day Portuguese.

b. Participle forms of 2nd conjugation verbs, ending in -udo (temudo, recebudu, etc.), and their replacement by -ido, another important aspect in establishing periods of linguistic history. This concerns changes in the participle suffixes of verbs ending in -er between early and modern Portuguese: in the early period the ending of the participles was the thematic vowel u + do (e.g. temudo), but the variant i + do soon began to appear (temido).

c. The existence of two series (tonic and atonic) of feminine possessives and the elimination of atonic forms in modern Portuguese. In early Portuguese the proclitic (adjectives) forms of the present feminine possessives minha(s), tua(s) and sua(s) generally presented the spellings mha(s), mia(s), pronounced as one syllable with a diphthong: miá(a), ma (a rarer contracted form), ta(s) and sa(s). There coexist with them the disyllables mia, mía, minha, tua and sua, generally used as absolute pronouns or as pronouns coming after the nouns. The feminine pronoun system was thus characterised by this double series, whose use varied according to the place in the syntagm. After a certain time this distinction ceased to be observed, with the forms minha, tua and sua used in both contexts, as in current Portuguese.

d. Allomorphy in the plural of nouns with a lexeme ending in -l (after syncope of this consonant). The fall of intervocalic /l/, exclusive to Galician-Portuguese, led to contact of the thematic vowel e with the preceding tonic vowel (ANIMALES > animaes; CRUDELES > cruues; GENTILES > genties/-iis; SOLES > soes, etc.), which gave rise to a process of diphthongisation (or crasis, in the case of the -l following tonic i) towards the end of the early period of the language: animais, crueis, gentis, sóis, etc. The Latin ending -iles became -ies in the tonic position, then -iis, which was reduced to -is by the rules of crasis. When atonic, it changed to -ees, which later, “through dissimilation or due to the place occupied by the final e, became -eis” (Nunes 1989:229). In the early form of the language this distinction was not observed, the plural normally ending in -is, whether or not the noun had a stressed final syllable.

It is clear that, however important social factors may be, they are subordinate to the imperatives of the linguistic system, and only play a part when circumstances permit. Thus, in determining the reasons for a linguistic change we need to look beyond the socio-cultural circumstances that propel it, considering also the conditions which are needed for it to take place. Weinreich, Labov and Herzog (1975:188) point to the interaction of the two orders of factors, stressing that “ex-
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planations which are confined to one or the other aspect, no matter how well con-
structed, will fail to account for the rich body of regularities that can be observed in
empirical studies of language behaviour". Thus, for example, for the syncope of -d-
in 2nd person plural verb forms, the intervocalic position was a determining factor;
the compatibility or otherwise of the sounds in the spoken series gave rise to the
different rhythms which evolved as the thematic vowel u of the suffix -udo changed
to the i of the modern participial ending; and the three nearby vowels in the plu-
rals of some nouns, adjectives and pronouns with a lexeme ending in -l caused the
thematic vowel to become a semivowel, thus leading to diphthongisation. However,
the ‘adoption’ and ‘diffusion’ of new variants were usually associated with specific
extralinguistic factors.

Another important factor to consider when explaining linguistic change is ana-
logical levelling, a process which most affects morphology. An analogical change
happens when a form which is less transparent, or no longer transparent for the
speaker, is replaced by a new, functionally equivalent form, with a structure reflect-
ing the replaced model. Thus, for example, the gradual decline in the suffix -udo in
2nd conjugation verbs, with a consequent reduction in the morphological alterna-
tion -udo ∼ -ido, was due to a process of levelling which must have been modelled
on the participles of verbs with thematic i vowel. Furthermore, it is highly probable
that factors favouring an analogical change would also lead to the spread of other
linguistic innovations.

2. Exploring the medieval Portuguese corpus: the social context
of morphological changes

Before undertaking a division of language into periods it should be emphasised
that any such effort must represent a compromise between various views and vari-
ous ‘functional languages’ (Coseriu 1981:308), remembering, therefore, that mod-
ern phenomena first appeared in distinctly ancient periods, and that, conversely,
archaic phenomena persisted in new forms into modern, contemporary phases.
Arisng from this there are obvious consequences when defining the points a quo
and ad quem in the boundary marks of linguistic periods: as it is so difficult to date
them rigorously, since as has been observed (see Ali 1964:8) “linguistic changes
do not depend on the calendar, nor the year when the century began or ended”;
we will have to work with relative criteria, which always refer to the social heter-
genity characteristic of any speech community. And if it is true that any linguistic
change takes place slowly and at a variety of rhythms according to the period, it is
equally true that the change does not date from a precise moment, identical for all
the phenomena under study. Apart from the different social evaluations to which
the archaic variants of each phenomenon were subjected, which were responsible in some ways for asymmetries in their evolution, there are the difficulties presented by the different rates at which oral forms were fixed in the graphic system: with some phenomena the written form followed close behind oral dissemination, while in other cases it took much longer.

Despite some limitations in this type of analysis, such as the lack of representativity of a corpus which has only survived by chance and is thus outside the observer’s control, we think it is worthwhile to schematise the evolution of the four phenomena, as seen in some chronicles and religious and technical texts. We should mention that the selection of these texts, which usually reflect the prestigious norm, arises simply from the need to start from a point of reference which includes the greatest incidence of the phenomena under study and covers the widest range of relevant periods. Findings are shown in the Figure 1.

The morphological variable with the richest potential is clearly the -des in 2nd person plural verb forms, since there is a wider chronological range between the time of adoption of forms without -d- (the syncope represents 0.8% in *Flores de Dereyto*) and their extinction in written texts (-d- still occupies 5% in the *História de Vespasiano* and dominates throughout the 1515 copy of the *Boosco deleitoso*).

As there was no gradual, linear evolution here, the variable should be analysed through attention to the sociolinguistic and locational situations where it occurred, to the processes of distribution across styles or phases and the communicative po-

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**Figure 1.** Rhythms of changes in the phenomena under study from 13th to 16th centuries.
tentials underlying them, to the characters who perform in the space of the text, and to the author who created them. For us, more important than considering the survival or syncope of -d- as an index of conservatism or innovation in itself, is to set it into the frame of the entire system in which any historical language should be analysed, and to examine the pragmatic effects of the survival of ancient and new forms across centuries. What does not seem in doubt is the functionality and intention in the preservation of -d-, as an indicator of certain types of characters, in some contexts in the chronicles of Fernão Lopes, the “chronicler of the people”, in the mid-15th century. From this, it seems that by 1450 forms with -d- were already stereotypes and therefore stigmatised in educated circles.5

2nd conjugation participles ending in -ido, of either native or Galician origin, which appeared even in early texts, supplanted early variants in all text-types by the end of the 14th century, and are dominant in the works of King Duarte (cf. Livro da ensinanza de bem cavalgar). The analysis of a relatively diverse corpus allows us however to distinguish three participle groups showing different rates of change. The largest group, made up of forms whose ending is preceded by an alveolar, dental or palatal phoneme, yielded to innovation from the mid-14th century, leaving no trace in current Portuguese; Fernão Lopes uses these participles ending in -udo as pejorative markers for some of his characters. The modern forms of participles with endings preceded by a labiodental fricative or bilabial phoneme spread gradually during the 15th century, coming into general use only at the end of the century. By the early 16th century the only archaic participle forms remaining in texts were those of the verbs creer, leer and teer and their compounds, which form the third group.6 Current Portuguese preserves some traces of these last two participle groups.

The homogenisation of feminine possessive forms, both in adjectival and pronominal contexts, was a very rapid phenomenon.7 It was seen occasionally at the end of the 13th century, and mha and mha, for example, coexisted up to the middle of the 14th century. This was the beginning of the ‘selection’ stage, which depended on differences between various sociocultural-groups within the speech community. The use of both mha and minha within a single text is very rare (in contrast to sa and sua), and is found mainly in private legal documents, where archaic variants survive up to the beginning of the 15th century. We should point out that the form sa was used as a social marker or stereotype in Fernão Lopes’s Crónica de D. João I (mid-15th century), in the discourse of a ‘perfidious’ abbess, ‘kinswoman to the queen’, where, curiously, we also find the archaic verb form leixade (with intervocalic d).

The scarcity of evidence about forms of the plural morpheme of lexemes ending in -l should not be seen as symptomatic of a very late evolution of this type of phenomenon;8 we believe they would have had a very similar chronology in oral language to those we have already analysed. This seems in fact to be the most ‘de-
ceptive' aspect, since it shows better than any other the slowness of changes in spelling in relation to the evolution and transformation of the language. If we accept J. Joaquim Nunes's interpretation of the evidence (in his view, the revival of -l- in the plural of the lexeme mal [males] is due to the need to distinguish the pronunciation of the plural form maes from the adverb mais), it is highly probable that the current plural forms of lexemes ending in -l preceded by a would have arisen at the end of the 14th century, a time when males was beginning to be generally used. As for plurals ending in atonic -is, they began to give way to the ending -es (later to become -eis, as in current Portuguese), in literary prose from the mid-15th century.

3. Towards a new proposal of periodisation

The four phenomena we have studied, when viewed together, show without doubt that at the end of the first quarter of the 15th century the Portuguese language, understood as the basis of the literary tradition, was already showing signs of modernity. If we had to choose a significant historical point indicating a real change from early to modern Portuguese, we would not hesitate in pointing to the revolution of 1383–1385, a point when a new social order made itself felt, unleashed by the socio-geographic mobility of the people and the middle class entrepreneurs of Lisbon. The medieval documents we have analysed in our research show clearly that linguistic change was in fact associated with a historic-political situation, which led to considerable shifts of population. Times of great linguistic ferment marked important stages in the country’s history: political, social and economic changes at the end of the thirteen hundreds, particularly a profound attack on feudal structures and the birth of a new social order characterised by the rise of the middle classes, were external factors which impacted crucially on the structure of the language. We can see that language change is always accompanied by a stage of variation, in which rival forms coexist. Generally speaking, from 1350 onwards modern and early variants begin to be found within the same text, except in phenomena where lack of correspondence between the oral and the written led to special characteristics.

Thus, not forgetting the dual nature of the language, we can say that the early phase dominated in the first half of the 14th century, a time when the adoption of modern variants was relatively sporadic and individual. The wider spread of these variants, preserved in writing at different rates according to the particular phenomena, happened between 1350 and 1380, at the time of King Fernando’s political leadership in Lisbon. After the revolution of 1383–1385 there was in effect an alternative ‘language set’, inspired by new socio-economic groups: if we ignore
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the religious texts, in which -d- remained until the early 16th century, we can see that from the end of the 14th century the linguistic panorama of the corpus, for the phenomena we have studied, is already much more modern than archaic.\textsuperscript{11}

Even though the prestige variety was already well defined in texts from the 1st quarter of the 15th century, the ‘selection’ (see Coseriu 1983:56–57) process went on until about 1450, thus forming a phase of “transition from the medieval language to a stable basis” (Castro 1991:293). In this transitional phase a crucial part was played by King João I and by the Infantes of Avis, in unifying and consolidating the language as a badge of national identity. It is this stage of the language which we shall call ‘middle’ or ‘pre-modern’ Portuguese, locating it at a point considerably earlier than the earliest date suggested by Ivo Castro.\textsuperscript{12} But it is certainly with the prose chronicles of Fernão Lopes that the language reaches its mature phase, that is, when there is a sufficient distance between the linguistic ferment of the end of the previous century and the point when, now almost free of archaic features, the language is available as an object of observation. The modern phase of the language begins precisely with this new linguistic awareness, as seen in the social evaluation by speakers or writers of certain signs which they begin to see as archaic. When, after the incident of Alfarrobeira, King Afonso V came to the throne, ending the crises and conflicts which had dragged on since the previous century, the language seems definitely to have reached its ‘stable basis’.\textsuperscript{13} From the socio-economic point of view, this linguistic stability was the opposite of what was happening elsewhere in the country: African conquests, the first effects of overseas expansion on the life of the capital, and the strengthening of social networks as a result of demographic growth, were all decisive in consolidating the language. So, in the 1480s, when the first winds of Italian humanism blew into Portuguese culture, and when commercial capitalism began to be established on a transcontinental scale, favoured by the new Cape route, it can be said that certain morphological changes in Portuguese, particularly significant in terms of language periods, were being brought to a conclusion.

To conclude, we should emphasise the artificial nature of any division. We should recall the concept of language in a constant state of becoming, acquiring a more definite shape when from the present it throws a glance back into its past. While it is true that the dawn of modernity can be glimpsed in the language of the troubadours, it is equally true that archaic traces have survived indelibly in modern Portuguese.

Notes

* I owe special thanks to Instituto Camões (“Programa Lusitânia”) that helped the presentation of this paper.
1. Experts in the periods of Portuguese linguistic history, such as Said Ali, Serafim da Silva Neto, Carolina Michælis de Vasconcelos, José Leite de Vasconcelos and Paul Teyssier are unanimous in considering that the period of ancient Portuguese extended to the early 16th century, a time which marked the beginning of the modern period. Others, such as Pilar Vásquez Cuesta and Maria Albertina M. da Luz, prefer to call the 16th-century language 'classical Portuguese', a term also used by Ivo Castro in his *Curso de história da língua portuguesa*. A recent critical overview of periods in linguistic history is that by Clarinda Azevedo Maia – *Sociolinguística histórica e periodização linguística. Algumas reflexões sobre a distinção entre “português arcaico” e “português moderno”*, offprint of the journal *Diacrítica*, no. 10, Braga, University of the Minho, Centro de Estudos Humanísticos – especially p. 5–11.

2. The corpus analysed was very extensive and included various types of Portuguese documents from the 13th to the 16th centuries. For an idea of its extent, see the author’s Master’s thesis, presented to the Faculty of Arts of the University of Coimbra in 1996, part of the ‘Programa *Praxis XXI*: Do Português arcaico ao Português moderno. Contributos para uma nova proposta de periodização.’

3. Varieties which coexisted in the medieval socio-cultural spectrum should not be forgotten. We naturally recognise that the medieval linguistic system, seen as a whole, encompassed the speech and discourse of peasants, artisans and seafarers, but unfortunately the fragments found in the direct discourse of the texts are muted and inadequate. Among these, perhaps only Fernão Lopes has left us some echoes. It is also clear that we cannot include in the graph any data from legal documents, either private or royal, given their fragmentary nature. Furthermore, many texts from the period between 1330 and 1380 are essentially religious, and thus peculiar in being mainly translations from Latin, or later versions of originals written in a language that was already beginning to seem archaic. This is why this period is poorly represented in our graph. It should also be mentioned that, with regard to plurals of lexemes ending in -l, we have chosen only the modern plurals of lexemes ending in -l preceded by tonic e, since this is the subsystem producing most innovations. The change in the plural of the lexeme *mal* may provide some explanation for modern plurals of lexemes ending in -l preceded by a, which is why we have included it here.

4. It is interesting to note in this context that in medieval religious prose intervocalic *d* in the 2nd person plural of verbs survived until the beginning of the 16th century, sometimes in an attempt to recapture something of the Latin archetype. The prestige variety for the medieval religious community seems therefore not to have been the same as the standard as diffused by the centres of power. This goes to prove that the standard variety or form is not conceptually the same as a prestige variety. Standardisation arises for functional reasons, through the use of language for administrative purposes by those holding political power. Once it is diffused to other functions, it acquires what is commonly called ‘prestige’, in the sense of being an instrument in the service of the social mobility of its speakers. The concept of prestige is different, however, since it may be subjectively connected to speakers, forms and varieties which may be very different, or even in conflict, with the forms of the standard variety. Curiously, in the same texts where the *d* was kept, linguistic modernisation worked at the level of the feminine possessive pronoun system and of past participles of 2nd conjugation verbs, where change happened much more rapidly, both in spoken and written language. The most authentic example of this asymmetry seems to be found in the *Boisco*
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deletioso, printed in 1515: here, although intervocalic d represents a much older phase of the language (since the -d- is kept throughout), the feminine possessive forms are the same in adjectival and pronominal contexts, and 2nd conjugation past participles usually end in -ida. The situation clearly reveals a different social evaluation of the early varieties of these variables.

5. To find statistical data about this phenomenon see Carvalho 2000. Another work about the morpheme -des was presented to the international congress "500 Anos da língua Portuguesa no Brasil (Évora 8th–13th May 2000)". The Proceedings are in print.

6. To find more information about this phenomenon see Carvalho 2001.

7. An article about this phenomenon is in print.

8. It should be remembered that in Coseriu’s view (see Coseriu 1983:56–57), ‘selection’ consists in alternate use of the two variants. The drift between ancient and modern within the same text is essentially seen in private and royal legal texts. In literary texts, such distribution is often functional in character, reflecting stylistic, contextual and (sometimes) chronological concerns.

9. To find more detailed information about this phenomenon see Carvalho 1999a.

10. We recall the expression of Ivo Castro (1993:97): “o som já se apagou há muito e só o podemos conhecer por inferência, a partir de grafias que ora aspiram à transcrição fonética, ora não aspiram, tingindo de ambiguidades um relacionamento entre língua oral e língua escrita que é sempre desconfortável, quando não enganador” (“the sound has long died out, and we can only know of it by inference, through letters which sometimes express phonetic transcription, but sometimes do not; thus the relationship between the spoken and written languages is tinged with ambiguities, and is always uncomfortable, or even deceptive”.

11. The name of the phase arcaica média (“middle archaic”), given by Evanildo Bechara to Portuguese from the 15th to the first half of the 16th centuries, is nevertheless worth reconsidering.

12. The date suggested by the author is 1536, when the last work of Gil Vicente (who used many archaisms as a way of characterising his characters) was published. Besides that, it was when the first Portuguese grammar appeared.

13. It is worth remembering, however, that we are adopting the expression in this particular context, and only with reference to the phenomena under study. Naturally, even after the 16th century the language was to go through significant changes, especially in vowels and consonants.

14. Page references cited are from the reprint copy of this article.

References


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Isomorphism and language change

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Rand Afrikaans University

Isomorphism – the one-to-one correspondence between linguistic form and content/function – is probably more conspicuous in language change, characterised as it is by additions to or removals from either the signifier or the signified, than in the relative stability of the synchronic sign. This is demonstrated with reference to Afrikaans verbal strings in relation to their Dutch counterparts. It appears that while the Afrikaans verbal string has a more fixed sequence than that of Northern Dutch from which it derives, its elements are more loosely distributed throughout the clause. This implies that, as a signifier, ‘sequence’ may be divorced from ‘placement’. A number of syntactic ‘freezes’ in the Afrikaans verbal string are discussed as further examples of sign formation, as well as sign decomposition in the process of subject identification. It is concluded that local simplification of the signifier may lead to complexification – and a decrease in isomorphism – in the wider grammatical context of the sign.

1. Introduction

The phenomenon of isomorphism is anomalous in the sense that while not being as clear-cut a descriptive device as it might seem to be at first glance, it nevertheless affords us the opportunity of observing language change in progress. Synchronically, isomorphism is variously described as “a one to one correspondence between the signans and the signatum, whether this be a single word or a grammatical construction” (Haiman 1980:53) or the one-to-one relationship or correlation between “a sign and its meaning” (Haiman 1999:53), “form and content” (Ungerer 1999:307), “form and function” (Givón 1995:4), “expression and contents” (Martinet 1962:39) and “the signifier and the object/concept signified” (Nanny & Fischer 1999:xxiv). Diachronically, Antttila (1989:407) refers to a constant “tug-of-war” between form and meaning, an important “teleological force”: “When the one-to-many relations between form and meaning are felt to be problematic, one can expect a move toward one-to-one symbolization.”
The problem, from a descriptive point of view, is that if the formal element – be it a phonological or syntagmatic string – is difficult to quantify as ‘one’ in the idealised ‘one-to-one’ relationship, the ‘content’, ‘meaning’ or ‘function’ is even more so. A tenuous connection between form and function may, however, be found in Givón’s ‘quantity principle’, viz. “a larger chunk of information will be given a larger chunk of code” (cf. Heine 1993:109).

However, given a potential sign-like relationship, it is relatively easy to observe additions to or removals from either the signifier or the signified in the diachronic plane, causing either the improvement or optimalisation of the sign, or its disintegration or dissolution. This opens up the possibility of developing a ‘critique’ of signs as formative elements in language change: some are simply more successful, communicatively speaking, than others. It seems possible, for instance, that the disappearance of the preterite as a verbal category in early Afrikaans may be partly attributed to the lack of isomorphism and consequent opacity which according to Fisher (1999:352) characterises the strong preterite, as shown in in Figure 1. While in the case of weak preterites, such as English *worked* and Dutch *werkte*, the suffix correlates with past tense function, the prospective user of a strong preterite needs to learn a completely new lexical item or signifier only to express the function of ‘past tense’ for an already known lexical item. In second language acquisition by a large portion of a speech community, such as befell Dutch at the Cape from the 17th century onwards, this part of the vocabulary is easily considered superfluous (cf. Conradie 1999).

The process of sign formation and change will now be demonstrated with reference mainly to the Afrikaans verbal string and its integration into the rest of the sentence, in comparison to that of Dutch. In what follows, a sign will be considered as dyadic, and consisting first and foremost of a *fixed form* (cf. Eco’s (1984:1) reference to the “stiffness and immobility of the sign”), the signifier, referring to some *function* (be it semantic or grammatical in nature), the signified.

<table>
<thead>
<tr>
<th>shared meaning</th>
<th>loop- “walk”</th>
<th>INF. &amp; PRES.</th>
<th>STEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>liep “walked”</td>
<td>PAST TENSE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Dutch strong preterite
of late 20th century spoken Afrikaans (Kroes 1982) as well as a number of recent novels will be used as corpora to indicate some of the latest tendencies in the spoken language.

2. The verbal string and isomorphism

Let us first of all consider the fixed order of verbal elements in a verbal string as a possible signifier of verb types and relationships. In languages with verbal strings containing elements such as tense, modality, aspect and the lexical meaning of a main verb, it would be an advantage to both the encoder and the decoder if these occurred in a group with a fixed sequence. This fixed sequence of verbal elements is a characteristic of many languages. The English complex finite verb phrase, for instance, is a selection from the sequence modal/periphrastic, perfective, progressive and passive, for example He may have been being examined (cf. Quirk et al. 1997:73–74). Creole verbal markers are claimed (though not by all creolists) to follow a fixed sequence of TMA, i.e. tense (± anterior), mode (± irrealis) and aspect (± non-punctual) (Holm 1988:153, 166). Another language characterised by a fixed verbal sequence is Afrikaans.

If one compares the Dutch and Afrikaans verbal strings, it seems clear that the latter represents a fixed sequence. The order in which verbs appear in subordinate clauses, i.e. when verb-initial (V1 or V2) placement has not occurred, will be taken as basic.

Figure 2 represents the Dutch verbal sequence according to ANS, an extensive descriptive grammar of Dutch (p.1065, slightly adapted).

Note that both modal auxiliaries and auxiliaries as such occur in broken sequences. ANS (p.1065) moreover states that the main verb may take up more than one position. If the leftward scrambling of past participles is ignored, the Dutch verbal string contains variable sequences not encountered in Afrikaans (which only has the first sequence in (1) and (2) below), for example, the sequence modal auxiliary + main verb alternates with main verb + modal auxiliary (cf. ANS, p. 1072) – the so-called ‘red’ and ‘green’ sequences, respectively:

<table>
<thead>
<tr>
<th>modal verb</th>
<th>aux.verbs</th>
<th>other modal verbs</th>
<th>linking verbs</th>
<th>aux. verb</th>
<th>main verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>zullen “will”</td>
<td>hebben “have” &amp; zijn “be”</td>
<td></td>
<td></td>
<td>worden “become”</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Dutch verbal sequence
(1) *dat zij het werk moet doen x doen moet*  
that she the work must do x do must  
“that she must do the work”

The sequence p.p. + auxiliary verb alternates with auxiliary verb + p.p. (cf. ANS, p. 1067) – ‘green’ and ‘red’ orders, respectively:

(2) *dat we de auto gebracht hebben x hebben gebracht*  
that we the car brought have x have brought  
“that we brought the car”

The sequence set out in Figure 3 may be assumed for Afrikaans.

As an example, a string consisting of modal verb + linking verb + linking verb + main verb + aux. vb. *het* “have” was attested in SC:

(3) *En ek moes gaan loop hout haal het soos dit nou maar*  
and I had-to go walk wood fetch have as it now but  
on ’n boerplaas gaan  
“And I had to go and fetch wood as things go on a farm.”

It therefore seems clear that the fixed sequence of the verbal string has become a signifier in Afrikaans, in a sense that would only be partly true for Dutch. On the other hand, however, there are indications that the spread of verbal elements throughout the sentence in Afrikaans is less restricted than in Northern Dutch (Southern Dutch occupying an intermediate position), as will be argued below.

Thus, if van der Horst’s (1997:303) assumption is correct, viz. that penetration of verbal sequences by non-verbal elements has been in a steady decline in Northern Dutch since the 17th century, it seems possible that on the diachronic plane fixed sequence and juxtaposition are inversely related, with Northern Dutch favouring increased juxtaposition or clustering of verbs and Afrikaans sequence fixing. This would imply that sequence and juxtaposition are separate formal elements of the complex verbal sign in question, the relinquishing of one of which constitutes an increase in isomorphism.

Constituents of the Afrikaans verbal string seem almost to be in free distribution throughout the clause, as would appear from the examples cited below,

<table>
<thead>
<tr>
<th>modal auxiliaries</th>
<th>linking verbs</th>
<th>main verb</th>
<th>auxiliary verbs</th>
<th>aux. verb</th>
<th>aux. verb</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><em>worden</em> “become”</td>
<td><em>het</em> “have”</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. Afrikaans verbal sequence
where verbal elements often occupy up to three sentential positions separated by non-verbal elements. The grammatical factors involved in separation may differ according to the grammatical approach followed, but the following seem likely: (a) penetration of the final verbal cluster by non-verbal elements (Dutch *doorbreking van de werkwoordelijke eindgroep* – also referred to as ‘Verb Projection Raising’ by Robbers (1997:119–122) and others), and (b) placement of a verb in V1 or V2 position (characterising continental Germanic and Afrikaans). A special characteristic of Afrikaans, exemplified below, is furthermore (c) the placement of more than one verb in V1 or V2, in some cases referred to as ‘complex initials’.

The possible discourse dynamic functions of some of these movements, hinted at by contrastive accents, will not be pursued here. The following placements seem possible in Afrikaans, according to my judgement as native speaker:

(4) Standard language:
   a. *Sal jy vanjaar ’n artikel moet probeer begin skryf?*  
      will you this-year an article have-to try begin write  
      “Will you have to try to begin to write an article this year?”

Spoken language:
   b. *Sal jy móét vanjaar ’n artikel probeer begin skryf?*
   c. *Sal jy móét probeer vanjaar ’n artikel begin skryf?*
   d. *Sal jy moet probeer begin vanjaar ’n artikel skryf?*

Unacceptable:
   e. *Sal jy moet vanjaar probeer begin skryf ’n artikel?*

The following examples from recent spoken corpora (Kroes 1982) and literary prose, are categorised according to possible mechanisms. The situation in Dutch is dealt with afterwards.

A. Penetration of final verbal cluster by adjective, adverb, PP, etc.  
(with V2 placement in the case of (8) and (9))

(5) *Toe ons oudeste seun moes skool toe gaan*  
when our eldest son had.to school to go  
“When our eldest son had to go to school” (MC)

(6) *Maar wat meer ontstellend is vir my, is dat jy Betsie gaan*  
but what more disconcerting is to me is that you Betsie go  
*Kaap toe stuur*  
Cape to send  
“But what is more disconcerting to me is that you are going to send Betsie to the Cape” (Philander 2000:66)
(7) As jy nou jou hare laat nat sny
    “If you now have your hair cut while wet” (SC)

(8) en toe wil hulle probeer ook intrek daar na anderkant
    and then want to they try also move in there to other side
toe
    “and then they also wanted to try to move in over there.” (SC)

(9) maar ek sal graag wil verder gaan daarin een dag
    but I gladly want to further go therein one day
    “but I would very much like to pursue this further, one day” (MC)

B. Penetration of final verbal cluster by a direct object
   (as well as V2 placement)

(10) toe moes ons weer gaan ander glase koop
    then had to we again go other glasses buy
    “then we had to go and buy other glasses.” (MC)

(11) Dan sal ek seker maar moet ’n woonstel koop.
    then shall I probably but have to a flat buy
    “Then I’ll probably have to buy a flat.” (MC)

(12) My man sal maar moet ’n afskorting maak
    my husband shall just have to a screen make
    “My husband will simply have to make a screen.” (MC)

(13) ek sal nog kan stilletjies ’n baba hé
    I shall still be able to quietly a baby have
    “I’ll still be able to have a baby on the quiet.” (MC)

(14) Nou voel ons so … waarom sal ons nou gaan ’n fortuin
    now feel we so why shall we now go a fortune
    spend on a modern house
    “This is how we feel … Why should we now spend a fortune on a modern
    home?” (MC)

C. Double V2/V1-placement

(15) by sal moet in ’n hotel gaan sit
    he shall have to in a hotel go sit
    “he will have to go and stay in a hotel.” (MC)
(16) Maar hy sal moet seker nog so 'n verwarmer kry
but he shall have to surely another such a heater get
“But he'll surely have to get another heater like that one.” (MC)

(17) Jy sou moes 30 of 50 sent op die dollar vat
you would have to 30 or 50 cents on the dollar take
“You would have to accept 30 or 50 cents to the dollar.” (Meyer 2000:72)

(18) met ander woorde ek moet kan kaartjies verkoop, ek moet
in other words I must be able to tickets sell I must
kan pakkies aanneem en wegstuur en dan moet ek
be able to parcels accept and despatch and then must I
alles . . .
everything
“in other words, I must be able to sell tickets, I must accept and dispatch
parcels, and then I must . . .” (MC)

(19) en dan as jy wil probeer jou simpatie op ander sit
and then if you want to try your sympathy on others set
dan stoot jy hulle weg
then push you them away
“and then if you want to try to sympathise with others, you estrange
them.” (SC)

The last example, containing a dependent clause with SV order, may also be an
element of extended penetration of the final verbal cluster.

The situation in Dutch hinges on the so-called penetration of the final verbal
cluster by non-verbal elements. In an empirical study testing the normative situa-
tion in Dutch, based on two areas in the Netherlands (i.e. 'Northern Dutch') and
two areas in Flanders (i.e. 'Southern Dutch'), Haeseryn (1990:299) found signifi-
cantly more penetration to occur in the South than in the North, with penetration
by a direct object virtually excluded everywhere (p. 295). Van der Horst (1997:301),
basing his observations on sentences overheard or read, endorses the generally ac-
cepted view (also cf. Haeseryn 1990) that penetration is a typically Southern Dutch
phenomenon, and points out that even here it is very restricted and virtually absent
in the provinces of Antwerp and Eastern Flanders. An example such as:

(20) Je zou eigenlijk moeten een verrekijker hebben
you would really have to a far looker have
“You would in fact have to binoculars.”

with verbs in three positions, nevertheless resembles the situation in Afrikaans.
According to ANS (p.1362), penetration by a direct object, as in the example above,
or by an adverbial phrase, only occurs in Belgian (i.e. Southern) Dutch.
Among eleven examples quoted by van der Horst (1997:301) to illustrate various kinds of non-verbal penetration, two may also be interpreted, to my mind, as having a double V2 insertion rather than final verb cluster penetration, viz.:

(21) \textit{Dat zal moeten duidelijk worden in de loop van het volgende jaar.}\footnote{That will have to become clear in the course of the following year.}

It is also noteworthy that six out of the eleven examples mentioned display a juxtaposition of the modal auxiliary \textit{zullen} “shall” and another modal auxiliary, for example \textit{zal/zou moeten, zou willen, zouden kunnen}. Given that, in Afrikaans as well as Dutch, \textit{zullen/sal} has a fixed first position in any sequence of modal auxiliaries, and is the most grammaticalised modal (indicating future tense or serving as analytical subjunctive), one may surmise that \textit{zullen/sal} is moving towards the status of preverbal modifier. Note, however, that in the Afrikaans examples above other modals than \textit{sal} also enter into juxtapositions.

Van der Horst (1997:303), quoting sources indicating that penetration occurred frequently in earlier Northern Dutch, claims that it has been in decline since the 17th century in favour of uninterrupted final clusters. This would indicate that Afrikaans, based as it is on Northern rather than Southern Dutch, must have been moving in the opposite direction as far as the penetration of verbal clusters is concerned. From the point of view of sign-formation, this suggests for Afrikaans that while the sequence of verbs has been fixed, ‘rules’ determining their placement or grouping have been relaxed. This principle is indirectly corroborated by the fact that in Dutch penetration is found in the final sequence auxiliary verb + main verb, i.e. the ‘red’ order (Haeseryn 1990:77), but never in the inversely ordered cluster, suggesting that the more established a sequence is, the more it will tolerate interruption. As a sign, the verbal matrix in Afrikaans has been simplified to sequence only, with a concomitant increase in isomorphism.

3. ‘Freezes’ in the verbal string

Lyons (1977:96) points out that signs may be composed of simpler signs. The Afrikaans verbal string is not only generally characterised by its rigid sequence, but also by components which have formed or are forming rigid sub-sequences. These sub-sequences may be referred to as syntagmatic or diagrammatic ‘freezes’, which may open up new communicative possibilities in the language or lead to grammatical incongruity or even the loss of expressivity.
3.1 Loss of a realis/irrealis contrast

The expression of the realis and irrealis by means of hebben/het “have” + modal auxiliary in Dutch and Afrikaans offers a clear example of sign utilisation and sign decomposition, respectively, in the two languages. The Dutch sub-sequence hebben “have” + modal auxiliary (+ main verb) signifies (with most modal verbs) a realis/irrealis interpretation, depending on the selection of the present or preterite of hebben, i.e. the selection of the present tense of hebben signals a realis interpretation, and of the preterite, viz. had(den), an irrealis interpretation, for example Ze zei “She said…”

(22) a. … dat hij de auto gisteren heeft moeten brengen (REALIS)  
that he the car yesterday have must bring  
“that he had to bring the car yesterday (and has indeed done so)”

as against

b. … dat hij de auto gisteren had moeten brengen (IRREALIS)  
that he the car yesterday had must bring  
“that he should have brought the car yesterday (but didn’t do so)”

This is a prime example of a formally conspicuous signifier coupled to a communicatively useful functional distinction, in both main and subordinate clauses. While only the vestiges of the realis construction are still attested in Afrikaans, cf. (23) and (24) below, it is presently disappearing from the language despite its possible functional value.

(23) ek het die mat moes skoonmaak van al die vuil kolle  
I have the mat had-to clean from all the dirty spots  
“I had to rid the mat of all the dirty spots.” (MC)

(24) Vanaf gisteraand het almal en alles wou  
from last night have everyone and everything wanted to  
saamwerk om sy vooruitsig te belemmer.  
collaborate for his prospect to impede  
“Since last night everyone and everything tried to collaborate to impede his prospects.” (van Rooyen 2000:41)

This process of disintegration is characterised by (a) the loss of the contrast with an irrealis pole owing to the loss of had “had” as preterite in Afrikaans, (b) the restriction of the modal to two or three lexical items, such as kon “could”, moes “had to” and wou “wanted to” at most; (c) the restriction of the sub-sequence to main clauses only, and (d) its infrequent use and the fact that it probably only forms part of the competence of some speakers. The disappearance of this functional contrast
is in all likelihood motivated by the fact that this sub-sequence runs counter to the fixed sequence of Afrikaans verb types, as set out in Figure 3.

3.2 Past participle plus auxiliary *het* “have” and the case of *was gewees*

The sub-sequence p.p. + the auxiliary *het* “have” in Afrikaans has rigidified to a signal in that (i) p.p. can no longer scramble away from it, (ii) it cannot be interrupted by the particle *te* “to” and (iii) *het* has become invariable – *hê* being the infinitive only of the main verb *het* “have”. This seems to take the grammaticalisation process termed ‘auxiliation’ by Brinton (1988:96–97), involving *inter alia* the “reanalysis . . . of a loose concatenation of main verb plus verbal complement as a unified or ‘frozen’ form” a step further. A contrast that can now be marked, perhaps more clearly than in Dutch, is the following:

(25) a. *om die werk gedoen te hê*  
for the work done to have  
“to have the work done”

b. *om die werk te gedoen het*  
for the work to done have  
“to have done the work”

*Het* is preposed to V1 or V2 out of p.p. + *het* if it is the only auxiliary available, unless the p.p. is *gewees* “been”, in which case we encounter the frozen sequence *was* . . . *gewees* rather than *het/is* . . . *gewees* (which only occur sporadically). Thus *was* . . . *gewees* (lit.) “was been” is not a pluperfect like its Dutch counterpart *was* . . . *geweest*, but merely an emphatic variant of *was* “was”, causing a grammatical asymmetry in that *gewees was* is excluded. P.p. + *het* freeze, always impenetrable in this order, is a functionally viable sign in being the marked verbal expression of the past tense or, in the presence of other verbs, marking the proposition as *irrealis*, conjectural, hypothetical, etc. In as far as these functions are all ‘distal’ in nature, the p.p. + *het* freeze constitutes an increase in isomorphism. The *was* . . . *gewees* freeze, constituting as it is an anomaly in the system, only serves the purpose of an emphatic past tense.

3.3 Linking verb plus main verb

Another ‘freeze’, usually optional, entails the combination linking verb + main verb. Romaine (1993:266, 267) refers to Givón’s concept of scope gradation according to which non-punctual aspect – typically expressed by the linking verb – has only the main verb under its scope, as well as to Bybee’s (1985) observation that aspect inflexion is closer to the verb stem than tense or mood markers. This may
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be a rationale for the syntactic linkage in Afrikaans. The ‘complex initials’, to use the term of Robbers (1997:172), occur in V2, as in (26) – even after topicalisation, as in (27) – and in V1, as in (28a) (interrogative) and (28b) (imperative).

(26) Hy laat staan die rokery. x Hy laat die rokery staan.
   he let stand the smoking x he let the smoking stand
   “He stops smoking.”

(27) Die rokery laat staan hy. x Die rokery laat hy staan.

(28) a. Laat staan hy die rokery? x Laat hy die rokery staan?
   b. Laat staan nou die rokery! x Laat nou die rokery staan!

This is well established usage even in standard Afrikaans, viz. the following examples from Afrikaans literature:

(29) Hy laat gly sy tong onthuts oor sy tande.
   he let slide his tongue anxiously over his teeth
   “He lets his tongue slide over his teeth anxiously.” (Dreyer 2000:133)

(30) Hy gaan maak seker die voordeur is oopgesluit.
   he go make certain the front door is unlocked
   “He goes to make certain the front door is unlocked.” (Meyer 2000:39)

(31) Eva kom neem by haar oor
   Eve come take by her over
   “Eve comes to take over from her.” (Matthee 2000:616)

(32) en dan kom kry ek my dat Joseph voor my bed staan
   and then come find I myself that Joseph before my bed stand
   “and then I realise that Joseph is standing in front of my bed”
   (Philander 2000:139) [with inversion]

(33) Kom probeer dit Sommer nou met my.
   come try this right now with me
   “Come and try this with me straight away.” (Vermeulen 2000:78)

The verbs sit “sit”, lê “lie”, staan “stand” and loop “walk”, followed by en “and”, often combine in a similar fashion with the main verb to express aspect, for example

(34) Sy loop en neurie die wysie. x Sy loop die wysie en neurie.
   she walk and hum the tune x she walk the tune and hum
   “She hums the tune all the time while walking.”

(35) Die liedjie loop en neurie sy. x Die liedjie loop sy en neurie.

(36) Loop en neurie sy die liedjie? x Loop sy die liedjie en neurie?
The following utterance (van Rossem & van der Voort 1996:15), with inchoative function, is a possible parallel in Negerhollands.

(37) **sellie ha loop slaep mit tien yer**
    3pl. pst walk sleep with ten hour
    “they went to bed at ten o’clock.”

Cf. Afrikaans, with similar meaning:

(38) **Hulle het tienuur loop slaap.**
    They have ten-o’clock walk sleep

With the juxtaposition of linking verb and main verb, collocations are created in which aspectual, causal and other functions of the linking verb are activated, as well as inseparable idiomatic collocations. Isomorphism will be served if the diachronic outcome is, for instance, one in which juxtaposition with the main verb in V1/2 necessarily imposes an aspectual interpretation on the linking verb – a stage which has by far not been reached.

4. **Isomorphism and subject identification**

Subject identification may be considered to be an important communicative function, particularly in languages without morphological case marking, but employing topicalisation. In Afrikaans, subject identification has become more reliant on sequence, depending either on the sentence initial position the subject frequently occupies or on a stricter application of ‘V1/2 – NP’ as a sequential sign than is the case in Dutch. Both van den Toorn (1975:14) and Paardekooper (1986:23) point out for Dutch that if the subject follows the finite verb, it may do so at a (considerable) distance (also cf. ANS, pp. 1311–1333), while this is not the case in Afrikaans (cf. Ponelis 1979:509).

A salient difference between the two languages concerns the filling of V2 after an initial subject, as in Afrikaans there seems to be no restriction on the number of verbs in V2 position in the vernacular, as long as the main verb remains stranded sentence finally, for example:

(39) a. **Jan sou hierdie boeke moet begin**
    John should these books have-to begin
    lees. (standard language)
    read
    “John would have to begin reading these books.”

b. **Jan sou moet hierdie boeke begin lees.**
c. *Jan sou moet begin lees hierdie boeke.
d. *Jan sou moet begin lees hierdie boeke.

Thus, when the sentence starts off with the subject – the position it most frequently occupies – the requirement of one (finite) following verb is simplified to that of a mere interface with verbs, i.e. a category change in the course of the sentence as such. The signifier has thus been simplified from a lexical sign (finite verb) to a sequential sign only, with a consequent increase in isomorphism. In the case of inverted subjects, however, the requirement of a single preceding verb remains a clear indicator of subject displacement, i.e. inversion as a signifier has increased its functionality. However, in as far as the function of subject identification now requires one of two formal signs, viz. ‘inversion’ or ‘following verb’ (as is the case in Modern English), overall isomorphism may be said to have decreased.

5. In conclusion

If we look upon isomorphic sign-formation as an ongoing process superimposed on or in some cases replacing other structuring principles, we may catch sight of certain dynamic processes involved in language change which might otherwise remain invisible. Looking at sentence and phrase structure, we have seen how portions of larger structures ‘froze up’ into formally stable signs with recognisable functions. In the case of the Afrikaans verbal cluster as well as subject identification, fixed sequence, on the one hand, and juxtaposition, on the other, have separated as formal elements in processes of sign simplification. Certain restrictions concerning the placement of verbs in the clause, including the restriction on one verb in V2 if preceded by the subject, are in the process of being lifted, resulting in a simplification of signs and therefore in increased isomorphism. Since in cases of inversion the identification of a following subject still requires V1 to contain only one verb except in the case of complex initials, overall subject identification as a sign process has been complicated, with a corresponding decrease in isomorphism.

References

ANS, see Haeseryn et al. (1997).


MC: Main Corpus, see Kroes (1982).


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SC: Spontaneous Corpus, see Kroes (1982).
From purposive/future to present
Shifting temporal categories in the Pilbara languages of north west Western Australia*

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1. Introduction

A number of languages spoken in the Pilbara region of Western Australia show a shift in temporal categories such that an original purposive inflection now serves as the present tense. We can be confident of the direction of change given that the verbal suffix form, *(l)ku, recurs across Australia with a purposive function, and is reconstructed with this function. That the direction of change is from purposive to present makes this development particularly noteworthy. To my knowledge no other examples of such a shift have been reported in the literature. This paper attempts to explain how the particular shift in category may have come about.

It is likely that all the Pilbara languages are related, though there is as yet no strong evidence that they form a genetic subgroup of some higher grouping of Australian languages. Their relatedness is demonstrated by reconstructions of vocabulary (O’Grady 1966; Austin 1981) and by their reflexes of wider reconstructions of phonology, pronoun systems, verb morphology and nominal morphology. However, a mapping of shared innovations across the area reveals no clear bundling of isoglosses. The shift of a purposive/future category to the marking of present tense is a feature of just three languages in the Pilbara region – Panyjima, Ngarluma and Yindjibarndi/Kurrrama. These languages are contiguous and share a number of other important features the most striking of which is the fact that they, along with Martuthunira (which does not share the purposive to present shift) have innovated an accusative alignment type with a productive passive voice from an earlier split-ergative system. A discussion of language relationships in this area can be found in Dench (2001).
2. Reconstructing a purposive/future *-(l)ku

The first issue to consider in relation to the development of the categories discussed here is the direction of change. Can we be certain that the direction of historical change is from an earlier purposive to a modern present rather than the alternative scenario in which what may have been an original present has shifted to purposive in a range of languages?

The identification of the modern Ngarluma, Panyijima and Yindjibarndi/Kurrama present tense inflection with an ancestral purposive/future was first made by O’Grady (1966:76):

The PPN [proto Pama-Nyungan] verb suffix *-lku . . . has undergone a unique shift in referent in the Ngayarda languages from ‘future’ (or ‘optative’) to ‘present’.

O’Grady could be quite confident of this innovation. The verbal suffix -ku recurs across Australia in the most general function of a purposive. Dixon (1980) reconstructs a bare handful of inflectional suffixes for proto-Australian, but this set includes *-ku as a purposive. Dixon notes a shift from the mainly subordinate clause purposive function to future tense for some Western languages and reasserts O’Grady’s findings.

Purposive verbal inflection *-gu can be reconstructed for proto-Australian . . . In Walmatjari, Warlpiri and some other western languages *-gu has shifted from purposive to future meaning; in the Ngayarda subgroup there has been a further semantic shift, with -gu taking on ‘present’ meaning.

(Dixon 1980: 381)

The identification of the reconstructed verbal suffix *-ku as a purposive is reinforced through its identification with the widespread nominal suffix *-ku which functions widely as a dative/purposive. This identification has a long history, dating back to Capell:

If any morphological element of Australian language can safely be reckoned CA [Common Australian], it is the suffix -gu . . . It is here called ‘bivalent’ because it occurs with both nouns and verbs, and often with both in the same language. It indicates purpose – whether an object is intended for some purpose or person, or whether an action of some kind is intended.

(Capell 1956:77)

Given what we know of the distribution of purposive -ku, and with a well accepted view that it is inter-related with the nominal purposive, we can be certain of the direction of change. The historical shift is from old purposive, possibly via some intermediate category or categories, to present tense.
It should be noted at this point that the nominal purposive, *-ku has also shifted in function in a number of Pilbara languages, including those which show reflexes of the verbal purposive as a present tense. In modern Ngarluma, Panyjima and Yindjibarndi/Kurrara, and also in Martuthunira and Yinhawangka, reflexes of the original dative/purposive *-ku mark accusative case (see examples in §4 below). The change is the result of an alignment shift from (split)ergative to accusative – the original dative coming to mark all objects of transitive clauses through the generalisation of a nominative/dative frame for transitive verbs (Dench 1982, 2001). It is possible that the generalisation of the dative case to a general objective or accusative may have assisted indirectly in the shift from purposive to present. The generalisation of the dative may have compromised any remaining link between the verbal purposive and the nominal purposive senses of the ‘bivalent’ suffix and so may have removed a possible impediment to the shift of purposive to present.4

3. Conservative uses of *-(l)ku as a purposive

The following examples serve to illustrate purposive and future functions of the -(l)ku suffix in a selection of Western languages. Dependent purpose clauses in Australian languages typically describe an outcome which follows the matrix clause event and is in some way contingent upon the main clause event. Such clauses are often described as implicated purpose clauses; the relationship is one of implication as well as temporal succession. Purpose clauses are often desiderative, in the sense that the controlling clause agent is understood to perform the matrix event in order to achieve a specific stated and desired outcome.

In Wajarri, the purposive has its common Australian function of marking a dependent purpose clause. This is illustrated in (1) and (2).5

(1) *Ngapuri, nyinta nyina-ya wangka-ku palanya.
   brother-in-law.NOM you.NOM sit-FUT tell-PURP he.ACC
   “Brother-in-law, you will stay and tell him (the story).”
   (Douglas 1981:232, ex. 120)

(2) *Palu warlarnu mana juju yuwa-lku.
   he.NOM boomerang get.PAST dog strike-PURP
   “He got the boomerang to hit the dog.” (Douglas 1981:232, ex. 121)

Clauses that are normally dependent purpose clauses may appear as independent clauses in some languages, often with a desiderative sense. In some languages the original purposive inflection no longer has subordinate clause functions. In Nyangumarta for example, the *-(l)ku inflection surfaces as a marker of potential
mood. The sense is, “X wishes Y would happen and X expects that Y will happen” (Sharp 1998: 228). With a first person subject the potential functions as an optative.

(3) *Kampa-lku-li nyungu-ngu!
cook-POT-1DU.INC.S this-LOC
"Let’s (us two) cook it here!” (Sharp 1998: 228, ex. 47)

(4) *Yakurrama-lku-rna ngaju-lu-pa”, *karrama-rna karlaya.
copy-POT-1SG.S 1SG-ERG-EMPH say-NFUT emu
"I will try to copy, the emu said.” (Sharp 1998: 229, ex. 48)

Dependent purpose clauses in Nyangumarta also involve a -ku suffix. Here the form is the dative case suffix attached to a nominalised verb form (5).

(5) *Ngajulu wika mana-ru-lu
1SG.ERG fire get.NFUT-1SG.S-3SG.DAT woman-DAT food-DAT
kampa-na-ku.
cook-NM-DAT
"I got wood for my wife to cook food.” (Sharp 1998: 493, ex. 13)

In Nyangumarta, purpose clauses can also appear as (non-finite) independent clauses, as in (6). Sharp (1998: 240) explains that such clauses are used to indicate, “a desired or sensible course of action to take, or a sense of duty or obligation.”

(6) *Nganyjurru-lu munu nganganya-ku wirtu-jartiny pajali-jartiny kuyi.
1PL.INC-ERG NEG eat.NOM-DAT big-COM fat-COM meat
Pala-ja-lu kuyi mana-nya-ku wapartu-marta-jartiny jinyji-jartiny.
that-ABL-ERG meat get.NOM-DAT little-ATTEN-COM fat-COM
"We should not eat meat with a lot of fat. Therefore, we should get meat with (only) a small amount of fat.” (Sharp 1998: 241, ex. 93)

In Yingkarta, the original *(l)ku purposive inflection has become a future used in independent clauses to describe an anticipated or predicted future event.

(7) *Nganhula kampa-lku mantu.
1PL.NOM cook-FUT meat
"We’ll cook meat.” (Dench 1998: 43, ex. 123)

rain fall-FUT-AFF first-1SG.S-2SG.O talk-FUT tomorrow maybe
"It might rain. Better if I talk to you tomorrow maybe.”
(Dench 1998: 44, ex. 127)

(9) *Karuwanyji yingka-lku-rru nyintanha.
cat scratch-FUT-NOW 2SG.ACC
"That cat might scratch you.” (Dench 1998: 44, ex. 128)
Yingkarta also has a dependent clause purposive inflection, illustrated in (10) and (11).

(10) Karla-ri-ku mantu-wu kampa-lkura.
    fire-FACT-FUT meat-DAT cook-PURP
    “(I’ll) make a fire to cook meat.” (Dench 1998:22, ex. 30)

(11) Papa-wu-rna parlapiya-nyi paja-lkura.
    water-DAT-1SG.S want-PRES drink-PURP
    “I want water to drink.” (Dench 1998:27, ex. 64)

The form of the Yingkarta purposive suffix suggests a relationship with the more general purposive -(l)ku and indeed suffixes of the form -(l)kura and with a sense connected to purposive or future occur in a range of western languages. The -(l)kura suffix, further inflected with the dative case is the purposive inflection used in Yulparija purpose clauses and in different subject purpose clauses in Mantjiltjara (on the north-western and western edges of the Western Desert dialect continuum respectively). The suffix is also used in independent optative clauses in Yulparija (Burridge 1996) and surfaces as a hortative in Payungu, on the far west coast.

The few examples given above serve to show the range of temporal and modal functions of the -(l)ku suffix form and also that it surfaces in both dependent and independent clauses. A fuller picture is likely to show a recurrent cycle by which dependent implicated purpose clauses are used as main clauses, often with specific modalities.

4. The -(l)ku suffix as a present tense

We can now consider the functions of the -(l)ku suffix in those languages in which it surfaces as a present tense. I will concentrate here on just two of the languages; Panyjima and Ngarluma. Phonological changes in Yindjibarndi/Kurrama obscure the present tense form in some verb classes, and thus complicate the picture. The argument is certainly more convincing when one is able to directly observe the cognate forms.

In Panyjima, the present tense typically codes eventualities that are continuing at the time of utterance (Dench 1991). The unmarked aspect is imperfective: punctual actions are interpreted as iterated (12), processes as continuing (12), and telic actions as not yet accomplished (13). Example (14) describes an event taking place simultaneously with the speech event – the antics of two children who found the linguist’s attempt to speak Panyjima excruciatingly funny.
(12) Ngatha nyurr-u-yu mana-ku, kuwarri-kuwarri kanyiirr-ma-lku.
1sg.nom cold-acc get-pres now-redup sneeze-caus-pres
“I’m getting a cold, sneezing again and again.”

(13) Palya ngunyji-yu-rla ngananka-ku kampa-lku?
woman there-acc-fore what-acc cook-pres
“What is it there that the woman is cooking?”

laugh-recip-pres this-du dead-inch-pres very laugh-pres
Karnta yinti-ku thurla-ngka-nguru. Pirntirnti-rru
tear go.down-pres eye-loc-abl apart-now
thurni-ku parilha. Thurni-ku murnalpurlu parilha.
laugh-pres still laugh-pres close.by still
Purri-nmayi-ku thurni-ku yirra purranya.
pull-recip-pres laugh-pres teeth show
“These two (children) are laughing. They are dying laughing. Tears are
streaming from their eyes. Now they are apart, still laughing. Close to-
gether they are still laughing. They’re pulling at one another laughing,
their teeth showing.”

The present inflection is also used to code a generic present, as in the following
eamples.

(15) Ngunha thurr-u ngarri-ku mulha purranya yinta-ka. Nyinta
that snake lie-pres nose show pool-loc 2sg.nom
gore-fut-fore that 2sg.acc bite-fut
“That snake lies in the pool with just its nose showing. If you go (there),
it will bite you.”

(16) Yukurr-u panha janka-nma! Panha yanga-lku murruga-ngari-ku.
dog that tie-imp that chase-pres car-pl-acc
“Tie up that dog! It chases cars.”

In (17) the present marks a sequence of verbs all having the same subject. The tem-
poral frames of the eventualities described in this set of verbs can be seen as over-
lapping. In (18) there is a natural sequence to the events described which follows
the sequence of presentation.

(17) Kurri nyiya panti-ku, papa-yu mana-ku jartungu-la-nguru-ku,
girl this sit-pres water-acc get-pres rock hole-loc-abl-acc
winya-mlku yanti-yu, kati-rla yurlu-wali papa-yu.
full-caus-pres dish-acc take-fut camp-all water-acc
“This girl is sitting, getting water from a rockhole, filling a dish, to take water to camp.”

(18) *Ngunha-kutha palya-kutha kanpi-lku, thartipala-ku ngayi-lku,*
that-DU woman-DU winnow-PRES dirty-ACC throw-PRES
*manartu-ku karnku-lku, pani-lku majarra-la.*
good-ACC keep-PRES grind-PRES mill-LOC

“Those two women are winnowing (the seed), throwing the rubbish away, keeping the good, and grinding it on a millstone.”

In all of the examples above, the clauses in the present tense can be treated as independent finite clauses. The present tense inflection is also used in dependent relative clauses which share their subject with the matrix clause and which describe an eventuality which is contemporaneous with the matrix clause event. This is illustrated in the first line of (19), where the matrix clause locates the events in a past time frame.

(19) *Ngatha yumpu-yu yurrpi-lku panti-nha. Ngatha wiya-rna*
1sg.nom point-ACC smooth-PRES sit-PAST 1sg.nom see-PAST
*nyinku paka-rnu-ku.*
2sg.acc come-REL-ACC

“I was sitting smoothing the point (of a spear). I saw you coming.”

Dependent clauses marked with the present tense can only be controlled by a subject, and as subjects are unmarked in Panyjima, there is no case agreement between the matrix subject and the subordinate clause verb. Thus there is no explicit formal indication of the dependent status of the clause in (19).

Contemporaneous relative clauses controlled by non-subject arguments involve a distinct inflection, as the second sentence in (19) illustrates. For this clause type, the verb in the subordinate clause is marked in agreement with the controlling argument in the matrix clause, in this instance the accusative object. Patterns in Ngarluma are similar to those in Panyjima. Examples (20) and (21) demonstrate the present imperfective use of the -(l)ku inflection, (22) demonstrates its use as a generic.

(20) *Wara-pura ngunhu karri-ku, yalka-ku.*
clothes-PL that.NOM hang-PRES dry-PRES

“The clothes are hanging and getting dry.” (Kohn 1994, ex. 177)

(21) *Nhurtu wangka ngaju malhil-ka-lku.*
this.NOM talk 1sg.acc tired-caus-PRES

“This talk is making me tired.” (Hale 1960)
You eat faster than me." (lit: "You eat fast, I eat slow.")

(23) I (used to) get a stone – a long thin one. I (used to) scrape it and scrape it. A spark falls into the container, into the charcoal there. Smoke burns, a little smoke. I get grass, crush it, crush some grass. I get the coal which is burning, put it on the grass, hold it in the wind. A flame comes up.”

(Brandenstein, 1970:22–23)

Unlike in Panyjima, where the present has uses in same-subject dependent relative clauses, no strong argument for a subject controlled contemporaneous relative clause type can be made for Ngarluma.7 Contemporaneous events are presented as a sequence of clauses sharing the same tense inflection. This may be present, as in (23), or it may be past (24).

(24) Those two sat watching the smoke burning.”

(24) Palukutha parni-nha nhaku-rna juju-yi kampa-nha-ku.

DU.NOM sit-PAST see-PAST smoke-ACC burn-PAST-ACC

“Those two sat watching the smoke burning.”
Interestingly, where Panyjima has a distinct different-subject contemporaneous relative clause inflection, Ngarluma uses a form identical to the past tense suffix in this function. Examples of this occur in both (23) and (24) and strongly suggest that the current Ngarluma past tense originally had more general functions as a (non-future) imperfective.

To summarise, the present in both Panyjima and Ngarluma is a finite generic present which is used to describe events unfolding at the moment of speech, is used to make generic statements, and is used in narrative to connect a set of eventualities occurring simultaneously or in their order of presentation in the narrative.

In Panyjima, the present is also used as a verb inflection in contemporaneous relative clauses providing they have the same subject as the matrix clause. However, in these contexts, there is no formal indication of the subordinate clause status of the relative clause – which would normally involve agreement of the subordinate clause verb with the controlling matrix argument.

5. Between ‘purposive’ and ‘present’ – the Nyamal ‘prospective’

The question can now be raised again: How does a dependent purpose clause inflection, with a clear tendency to be reinterpreted as a main clause future modality, come to be reinterpreted as a generic, imperfective present tense? A possible path of development is suggested by a cognate verbal inflection in Nyamal, spoken just to the north of Panyjima and Ngarluma. I describe the Nyamal, -(l)ku(ra) inflection as a ‘prospective’ following the use of this term by Comrie (1976) to describe the mirror image of the ‘perfect’.

The Nyamal prospective has a variable form (some variation in use by the same speaker and some between-speaker differences). It occurs in a long form, -(l)kura, and a short form, -lku, and is effectively restricted to L-class verbs (the class is almost exclusively transitive in Nyamal). The prospective inflection (like the Ngarluma present) only occurs in independent clauses. However unlike most independent finite clause types, prospective clauses do not bear subject agreement morphology on the inflected verb. The absence of subject agreement strongly suggests that prospective clauses were originally dependent clauses.

In simple utterances, such as occur in conversation, the prospective is used to denote some future action which the speaker hopes or expects will come about. Examples (25) and (26) illustrate.

(25) Punyja-lkura ngaja papa. Manyja ngaja. Manya ngajuku
    drink-prosp 1sg.nom water thirsty 1sg.nom give.imp 1sg.dat
    papa!
    water
“I want to drink water/I’m ready to drink water. I’m thirsty. Give me water!”

(26) Kuyarri ngaja paja-lkura wungka-kapu-lu.
now 1SG.NOM eat-prosp hungry-sce-erg

“Now, I’m ready to eat/I’ll eat because I’m hungry.”

In these examples the activity denoted by the verb marked with the prospective inflection has not yet begun and the inflection serves to place the speaker in a state immediately preceding the inception of the event.

The prospective is here very similar to the Nyamal desiderative purposive illustrated in (27). The main function of the Nyamal purposive inflection is to code dependent implicated purpose clauses. However, it is also used in negative imperatives and in first person desideratives. Like the prospective, independent purpose clauses do not take subject agreement.

(27) Kama-larta ngaja yurta, wungka-kapu-lu.
cook-purp 1SG.NOM fish hungry-sce-erg

“I want to/I’m going to cook fish, because I’m hungry.”

In historical narratives and procedural texts, the prospective can be used to refer to activities which characterise important steps in the backbone of the narrative. The procedural text presented in (28), explaining how to cook an emu in an earth oven, includes a number of examples of the prospective. The piece shows a good deal of mixing with English (and the use of a piece of corrugated iron in building an earth oven is not the strictly traditional method), but the Nyamal pattern is nevertheless coherent. Both long and short forms of the prospective suffix occur in this example.

fire light-usit 3SG.DAT fire hot.stone

b. Yapanpa nguja-ngka wanyja-lku para yapanpa,
Hot.stone fire-loc put-prosp 3SG.DAT hot.stone
nguja-ngka.
fire-loc

c. That parta kunyingka-punyjarri, that nither one, that.
# other ashes-instrnom # # # #

d. Wanyji-lku martu, martu wanyji-lku, wanyji-lku martu,
dig-prosp hole hole dig-prosp dig-prosp hole

e. that one much long, makanu martu. You put’em marnit
# # # # long hole # # rock
now, pala-ngka.
# that-loc

#

g. Nguja pulara you put'em kankarni. Parti-la nguja-ngka. fire 3sg.loc # # on.top cook-pres fire-loc

h. You put him nguja-ngka now. When he

# # # fire-loc # # #
yinngarra-ngarri-nyjanu-la,
coals-inch-rel-loc

i. wanyja-lkura pala-ngka martu-ngka. put-prosp that-loc hole-loc

j. You cover’im up yayin-karta-lu now. Yayin put’em kankarni.

# # # iron-prop-erg # iron # on.top

k. And he jarta-lkura kanyji-kujalpa nganyja-ku, jarta-lkura. # # cover-prosp end-du sand-erg cover-prosp

l. parti-la through-n-through now. Wanpari parti-la. cook-pres # good cook-pres

a. “You would light a fire for [the emu], fire and hot stones.

b. Then put the stones in the fire for it, hot stones in the fire.

c. That other (fire) is for the ashes, the other one.

d. Then dig a hole, dig a hole, dig a hole,

e. that long, a long hole. Then put the rocks in it.

f. Put the rocks there in the hole. Put the rocks there and finish it off.

g. You put the fire on top. It cooks in the fire.

h. You put it in the fire now. When it’s burned down to coals,

i. then you put [the emu] there in the fire.

j. You cover it over with iron now. Put the iron on top.

k. And next you cover the two ends with sand, to cover it over.

l. It cooks through and through now. Cooks well.”

This example illustrates a number of slightly different uses of the prospective. First, the prospective can be used to describe the next in a sequence of steps, as in lines (28b), (28f) and (28i). This is consistent with the reading of the prospective given for the earlier examples. In context, the use of the prospective indicates that we are now ready to continue to the next step. Figure 1 represents the prospective in such examples; following conventions for mapping of the nucleus of an eventuality after Moens (1987) (and see also Moens & Steedman 1989; Kamp & Reyle 1993), and the notions of speech time (S) and reference time (R) after Reichenbach (1947).
The prospective places S and R in the preparatory phase preceding the next step in the sequence (the culmination).

However, it is difficult to get this reading for the repeated prospective forms in line (28d). Here, the iteration indicates a continuing activity; the digging of the hole in which to cook the emu. But notice that the activity is given an explicit end point; the digging must continue until the hole is of a certain indicated length. I suggest then, that here the prospective places the action in the preparatory phase leading up to the understood culmination point, which in this case is the point at which the hole is finally successfully dug. The second example of the prospective in line (28k) is also of this type. The instruction is to cover the iron with sand until it is covered.

The prospective, like a purposive, is essentially perfective in aspect. Like a purposive, it provides a culmination point which is defined through a perfective reading of the verb. Where the verb is telic – for example, digging a specified hole – then this culmination point is naturally enough the endpoint provided by the basic event type itself. But where the event is an activity with no defined endpoint, then the perfective reading defines a culmination point for the prospective which is the inception of that activity (as in Figure 1). This fits the uses of the prospective in (25) and (26). To make a comparison with the perfect, a perfect such as “has dug a hole” defines a post-state in which the hole remains dug (under one reading of the perfect), but the ‘hole digging’ is presented as an undifferentiated whole; that is, it is perfective.

The Nyamal prospective defines a pre-state in which the hole, for example, is not yet dug. The culmination point is defined by the perfective reading of the telic verb. However, given that hole-digging is an activity, then there is no reason why the preparatory phase preceding the culmination point might not include hole-digging. I suggest that this is how the sequence of verbs in line (28d) should be interpreted. Figure 2 presents this diagrammatically.

A similar example is (29). Here the speaker describes the activity of spinning spinifex fibre into a ball of twine, which would later be made into a net. The iteration of prospective verbs in the second line emphasises the continued activity of

| //////////////////////////////////////////////// |------------------------------------------ |
| preparatory phase                      culmination                      consequent state |
| S, R                     be ready to put                     put stones in the fire |
|                          stones in the fire                     |

Figure 1. “Then put the stones in the fire” (28b)
rolling a spindle on the thigh ultimately leading up to the point at which the ball of twine is completed.

    pull-usit-3PLS dry-usit roll-usit-3PLS #
    roll-prosp roll-prosp roll-prosp roll-prosp ball
    Wapurta-ya-kamu-ya now...
    ball-caus-usit-3PLS #
    “They used to pull it out (of the water). It would dry. They would roll it now. Roll and roll and roll and roll it into a ball. They would make it into a ball now.”

Where prospective forms can be given an interpretation in which the event they depict is not yet completed, they are often accompanied by the same verb inflected with some other tense form, typically the continuous past and/or usitative both of which are imperfective. Sequences of verbs including those marked with the prospective then describe a sequence of repeated acts which lead to the culmination of the activity. In Panyjima and Ngarluma the present covers this function.

6. Purposive > Prospective > Present

The Nyamal prospective provides a plausible mid-point in the shift of a dependent purposive to a finite present. In formal terms, the prospective shares features of both dependent and independent clauses in Nyamal. It is restricted to main clause function and selects main clause case marking pattern; yet as in dependent clauses and ‘insubordinated’ clauses (such as the desiderative purposive illustrated in (27) above), verbs inflected with the prospective inflection do not take subject agreement. We can thus be reasonably confident of the dependent clause origins of the inflection and so can establish cognacy with purposive forms in other languages. At the same time, the restriction of the Nyamal prospective to main clause function links it to the Panyjima, Ngarluma and Yindjibarndi/Kurrama present tense
inflections which are (with Panyjima same-subject relative clauses as a restricted exception) similarly confined to main clause function.\textsuperscript{10}

Semantically, the Nyamal prospective is also a plausible mid-point between purposive and present. To begin with, the Nyamal prospective still resembles those purposives which have both dependent and independent uses. Although the Nyamal prospective is restricted to main clause function, it retains the original semantics of implicated purpose and shares with ‘insubordinated’ dependent clauses a restriction preventing subject agreement.

We might imagine an earlier construction type in which the matrix clause provided a set of antecedent circumstances upon which the event denoted in the dependent ‘prospective’/purpose clause was contingent. The independent clause use would then describe an eventuality which was strongly contingent on current (reference time) circumstances, left unspecified. This use of the prospective is maintained in Nyamal utterances in which the reference time is speech time.\textsuperscript{11}

In procedural narratives, the reference time is a point in the unfolding event line which represents the backbone of the narrative. Since the sequence of events is typically recapitulated in the order of presentation of the events – event lines are strongly iconic – the semantics of the Nyamal prospective are effectively redundant in this context. At the same time, where the pre-state defined by the prospective may itself be the activity leading up to a defined culmination point, the way is open for the prospective to be reinterpreted as an imperfective narrative present describing that ongoing activity. Verb forms in the ‘prospective’ occur in natural sequence and simply move the event line forward. From such contexts, the somewhat faded prospective might be generalised to other present tense uses.

7. Conclusion

This paper has suggested a path by which the change from dependent purposive to present tense in languages of the Pilbara might have progressed. It relies importantly on the recognition of a common tendency in Australian languages for dependent purpose clauses to be used as independent clauses. In such ‘insubordinated’ roles, they take on a range of typically modal functions (e.g. optative, hortative). The path of development described in this paper depends on the extension of the aspectual characteristics of purposives rather than on their modal characteristics. The paper identifies an intermediate category between purposive and present – the prospective.

While the history of verbal categories sketched here is, I believe, plausible, it remains incomplete. Necessarily, the purposive, prospective and present categories in the languages which have them stand in opposition to a range of other temporal
categories. A more satisfying account of the development of these categories will take into consideration the history of the inflectional paradigm of which they are part.

Notes

* I am especially grateful to those people who worked with me to record information about their languages: †Percy Tucker and †Herbert Parker (Panyijima); †George Couyou, †Bertie Windy and †Towerana Willy Williams (Yingkarta); †Daisy Williams (Nyamal). I am also grateful to Terry Klokeid for allowing me to use Nyamal data he recorded with †Maggie Horace. Thanks to Marie-Eve Ritz for advice on temporal semantics and to Patrick McConvell, Rachel Nordlinger for their comments and suggestions. Also thanks to participants at ICHL 2001 for useful discussion. The usual disclaimers apply. The research reported here was supported by the Australian Research Council (A59131653, A59532829).

1. The verbal suffix form involves an invariant element, -ku, which may be preceded by a conjugation dependent stem-final suffix. The most general alternation, at least in Western languages, is between a form -lku in the predominantly transitive conjugation and -ku in the predominantly intransitive conjugation.

2. Discussions of the Australian languages of this area make reference to a Ngayarta group of languages identified by O’Grady et al. (1966) on the basis of lexico-statistical sampling. I believe that there is no good evidence beyond this lexico-statistical analysis for a distinct group of languages coextensive with O’Grady’s Ngayarta group.

3. -gu can be equated with -ku.

4. I am grateful to Gavan Breen for this suggestion.

5. Abbreviations used in examples are as follows: 1, first person; 2, second person; 3, third person; abl, ablative; acc, accusative; aff, affective; all, allative; atten, attenuative; caus, causative; com, comitative; dat, dative; du, dual; emph, emphatic; erg, ergative; fact, factitive; forf, foreground; fut, future; habit, habitual; imp, imperative; inc, inclusive; inch, inchoative; instnom, instrumental nominalisation; intens, intensifier; loc, locative; neg, negative; nfut, non-future; nm, nominaliser; nom, nominative; o, object; pl, plural; pot, potential; pres, present; prop, proprietive; pros, prospective; purp, purposive; recip, reciprocal; redup, reduplication; rel, relative; s, subject; sce, source; sg, singular; usit, usitative.

6. Laughren (2001) describes relationships among the three related nominal suffix forms, -ku, -kura, -kurangu, which recur in languages from Central Australia west to the north west of Western Australia.

7. Yindjibarndi/Kurrama differs from both Panyijima and Ngarluma in this respect. In Yindjibarndi/Kurrama there is a distinct inflection (glossed by Wordick, 1982, as ‘imperfective’) which is used to code contemporaneous relative clauses on both subjects and non-subjects. The forms overlap with the non-subject relative clause inflection in Panyijima.
8. In data collected by Klokeid in the 1960’s, Maggie Horace makes use of the (short form of the) prospective in citation forms of both L-class and Ø-class verbs.

9. Subject agreement on finite verbs is illustrated in example (29) below.

10. The distinction between fully finite independent clauses and non-finite dependent clauses in Nyamal is marked by different case marking patterns and the presence versus absence of subject agreement morphology. However, in Panyjima, Ngarluma and Yindjibarndi/Kurrrama, the distinction is much less clear (Dench 2001). Independent and dependent clauses are not distinguished by distinct case marking patterns and there is no subject agreement morphology in these languages – this was either lost as a consequence of changes accompanying the alignment shift from (split)ergative to accusative, or was never present.

11. See Dench (in preparation) for further discussion.

References


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The formation of periphrastic perfects and passives in Europe
An areal approach

Bridget Drinka
University of Texas at San Antonio

1. Introduction

Most speakers of Western European languages would not regard the similarities to be found in the following collection of verbal forms to be remarkable:

(1) English  he has written  it has been written
   French  il a écrit  il a été écrit
   Dutch  hij heeft geschreven  het is geschreven
   German  er hat geschrieben  es ist geschrieben (worden)
   Mod. Gk. èkhei gramméno  einai gramméno
           or èkhei grápsai  èkhei graph(t)è
   Ancient Gk. grápsas èkhei  gegróménon estín
           or geographos èkhei

One might be tempted to assume that these perfect and passive periphrastic formations, so common among the languages of Europe, are unmarked, universal ways of designating the perfect and passive. In actuality, these periphrastic formations using the HAVE and BE auxiliaries turn out to be quite rare in the languages of the world (Dahl 1996:365; Haspelmath 1994:173; 1998:274–276). HAVE perfects, like those listed in the first column of (1), are largely limited to the small number of languages which use the HAVE possessive, especially those of Western Europe. Periphrastic passives, like those listed in the second column, turn out to be exceptional in the languages of the world, as well: Haspelmath (1990:29) found, in 80 languages surveyed, only 4 examples of passives formed with an auxiliary plus a passive participle – and all four of these were from Indo-European languages. Even more intriguing is the fact that, despite their wide diffusion across the languages of
Europe, neither the periphrastic perfect nor the periphrastic passive can be reconstructed for Proto-Indo-European. Several questions come immediately to mind: Is this parallel distribution significant? Might there be some relationship between these periphrastic constructions? How did they both come to be so widespread across the map of Europe, and not elsewhere?

In other work related to this topic (Drinka, forthcoming), I have attempted to answer these questions with regard to the distribution of the perfect by claiming that the European HAVE perfect sprang ultimately from a Greek innovation which was adopted and reanalyzed by Latin, and which spread from there into the languages of Europe. In the present paper, I wish to go a step beyond these claims, and suggest that the development of the HAVE perfect in Greek was not an isolated innovation, but, rather, part of a larger set of changes motivated especially by a trend towards more overt voice distinctions throughout the Greek verbal paradigm. Of special interest will be the role of the mediopassive and passive participles in the formation of the periphrastic perfect, as well as the parallel and related development of the periphrastic passive itself. It will be suggested, in fact, that the development of the entire HAVE perfect/BE perfect/BE passive cluster is intimately bound to the emergent trend in Greek towards the clarification of voice distinction.

2. Preliminaries

Before we can explore how these systems interacted and changed within Greek, Latin, and the modern languages of Europe, we must first establish to what extent the perfects, passives, and participles were present in previous layers of the languages.

2.1 Proto-Indo-European

As mentioned earlier, Proto-Indo-European (PIE), with its highly synthetic morphology, did not form periphrastic perfects or passives. A synthetic perfect can be reconstructed for the earliest layers of the proto-language, but this perfect was clearly stative,¹ not anterior, in meaning, as witnessed by the abundance of stative perfects in the oldest layers of Greek, for example:

(2) Homeric Greek stative perfects

ke chárismai “I am agreeable”  
gégêtha “I am joyous”  
péphrika “I tremble”  
téthêpa “I am stupefied”  
pépoitha “I have confidence”  
(w)ê(w)olpa “I hope”  

(Chantraine 1927:8)
or in the archaic preterit-presents of Germanic.

(3) Goth

- wait  "I know"  *wōyd-e  "knows"
- gadars  "I dare"  *dhe-dhórs-e  "dares"
- man  "I intend"  *me-món-e  "is mindful"

(Cowgill 1975:568–569)

Alongside these stative perfects existed the other major temporal-aspectual category of Early PIE, the present/aorist system. The earliest distinction between the present/aorist and the perfect systems is often assumed to be one of diathesis (see esp. Neu 1976, 1985, 1989): the oldest perfects bore many of the characteristics of a middle voice, including subject orientation and inherent intransitivity. Because the perfects and the middles presumably came from the same source, there was no separate middle perfect category in PIE.

Although the passive cannot be reconstructed as a category per se in PIE, passive meaning could be expressed by the middle voice in those languages which had it, or by an -r construction, presumably developed from the 3rd pl. in Italic, Celtic, Anatolian, Tocharian, and Phrygian (Puhvel 1970:631–632; Flobert 1975:453–460; Meid 1977:117–119; Neu 1985: 290).

The participle system of PIE is assumed to be fairly rich, with three sets of participles: the present (-nt-), perfect (-wos-), and mediopassive (-meno/-mno-) participles. The -to- construction, which gave rise to past passive participles in a number of IE languages, is usually characterized as a verbal adjective rather than as a participle in PIE (Sihler 1995:621–622; Szemerény 1996:323). Nevertheless, its connection everywhere to the verbal system, with its pervasive meaning “accomplishment of the notion of the object” (Benveniste 1948:167–168), might tempt one to place the *-to/-no- forms among the participial constructions of the IE verbal system.

2.2 Greek

The stative value of the IE synthetic perfect persisted into Homeric Greek, as illustrated in (2), and the category, complete with reduplication, o-grade stems, and special endings, flourished in post-Homeric classical Greek. The category was greatly enlarged by the trend in Greek to fill out active and middle paradigms. The far-reaching implications of this trend will be discussed in some detail below.

The function of the passive was carried by the middle, with no separate category to do the work of the passive except for a ‘passive aorist’ (e.g., tithemi “I put”: pass. aor erēthē “it was put”) which is “nothing but a special active formation, as its endings show, which became passive by virtue of its preference for intransitive force” (Moulton 1908:161).2
The Greek participle system preserves the IE system well, and, as mentioned earlier, has expanded upon it, especially in response to the trend towards diathetic enrichment.

(4) Greek Participles

<table>
<thead>
<tr>
<th></th>
<th>M.</th>
<th>Æ.</th>
<th>N.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present, Future active</td>
<td>-ôn</td>
<td>-ousa</td>
<td>-on (-ont-)</td>
</tr>
<tr>
<td>middle/passive</td>
<td>-ómen-os</td>
<td>-ê</td>
<td>-on</td>
</tr>
<tr>
<td>Aorist active</td>
<td>-âs</td>
<td>-âsa</td>
<td>-an (-ant-)</td>
</tr>
<tr>
<td>middle</td>
<td>-âmén-os</td>
<td>-ê</td>
<td>-on</td>
</tr>
<tr>
<td>passive</td>
<td>-eís</td>
<td>-eîsa</td>
<td>-én (-ent-)</td>
</tr>
<tr>
<td>Perfect active</td>
<td>-ôs</td>
<td>-úia</td>
<td>-ôs (-ot-)</td>
</tr>
<tr>
<td>middle/passive</td>
<td>-mén-os</td>
<td>-ê</td>
<td>-on</td>
</tr>
</tbody>
</table>

The mediopassive participles came to be especially productive. This fact helps explain why the -to- construction remained a verbal adjective in Greek rather than taking on participial status as occurred in many other IE languages: the mediopassive participles developed in conformity to other parts of the verbal paradigm, and were especially connected with passive meaning. There was no need for an extraneous construction to perform the function of a passive participle.

2.3 Latin

It is traditionally assumed that the IE perfect merged completely with the IE aorist in Latin (cf. reduplicated perfects, presumably remnants of IE reduplicated perfects, like tutud “I struck” and cecin “I sang” alongside the s-perfects, assumed to have developed from IE s-aorists, like dixi “I said”, duxi “I led”, etc.). The term ‘perfect’ in Latin actually refers to a general preterit, used for past as well as anterior meanings. The fact that the IE perfect category persisted in Greek but did not continue as a distinct category in Latin points to the primacy of Greek in the creation of the new periphrastic: a category was already in place within which the Greeks could develop a periphrastic perfect; no such discrete category existed for Latin.

A separate synthetic passive did exist in Latin, built with r-endings, suppleted with such periphrastic forms as the perfect passive and the pluperfect passive:

(5) Latin passives

<p>| | |</p>
<table>
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<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>laudor</td>
</tr>
<tr>
<td>Perfect</td>
<td>laudátus sum</td>
</tr>
<tr>
<td>Imperfect</td>
<td>laudábár</td>
</tr>
<tr>
<td>Pluperfect</td>
<td>laudátus eram</td>
</tr>
</tbody>
</table>
As in Greek, these first periphrastic verbs of Latin used BE. These forms were easily constructed using elements existent in the language, BE + PPP (periphrastic perfect passive), with straightforward interpretations of each element. But it should be noted that this periphrastic perfect passive is not equivalent to the simple anterior that it would eventually represent in the Romance languages:

(6) Lat. laudatus sum “I was praised”  
    Ital. sono lodato “I am praised”

The Latin perfect passive is not anterior alone, nor is it passive alone. It means past or anterior, and passive, all at once, its multiplicity of meaning created by the complex semantic value of the PPP itself. The fact that forms like laudatus est “was praised” serves as a past passive, not as a present one, as in its modern Romance descendents (è lodato “is praised”), indicates the original inseparability of both semantic elements of the PPP. The BE only serves to mark person and number; it is essentially a place holder, a means of providing finite expression to the multifaceted participle. Deponents, that is, active verbs with passive morphology, follow precisely the same pattern: profectus sum “I left”, lit. “I am left”.

The Latin participial system is very limited compared to that of Greek, comprising only a present active, a past passive, a future active and a future passive participle:

(7) Latin participles  
    PREM active -ns, (GEN.-ntis)  
    PERF passive -us, -a, -um  
    FUT active -urus, -ura, -urum  
    passive -ndus, nda, ndum

3. Innovation tied to diathetic expansion in Greek

With this background in place, we can now trace the direction which these systems took in their subsequent developments, and examine more closely the extension of diathetic contrast in Greek, referred to above. Table 1 presents a diachronic schematization of the perfect and aorist periphrastics in Greek.

In Homeric Greek, the oldest periphrasis was the BE + middle perfect periphrasis, which made a straightforward and literal use of the elements BE + middle perfect participle. Like the synthetic perfects, these perfects were still stative and almost exclusively intransitive. Examples of middle perfects can be found in Homer, but the choice of whether an active or a middle form of the perfect would be used depended on the verb itself. In other words, there was still just one way to form
Table 1. Development of the Periphrastic Perfect in Greek (based especially on Aerts 1967)

<table>
<thead>
<tr>
<th></th>
<th>BE + aor.ptcpl.</th>
<th>BE + perf.ptcpl.</th>
<th>HAVE + aor./perf.ptcpl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeric Gk.</td>
<td>Synthetic perf = Intransitive, static, subject-oriented. Perf. ptcpl. also intrans. The oldest periphrasis = perf Occurs earliest in 3rd sg indic.</td>
<td>Not used as a true aux. in Homer.</td>
<td>HAVE + aor. ptcpl used esp. by Sophocles, Euripides, &amp; Herodotus, 5th c. Used where a resultative perf. would occur, and esp. where no act. perf. existed before. Intended to express the perfect resultative. Trans.; object, as a result of the action, placed in a situation which continues to the pres. Also: HAVE + obj. + ptcpl</td>
</tr>
<tr>
<td>Post-Homeric Ancient Gk.</td>
<td>Perf. can now be transitive. New resultative use develops, esp. in 4th c.. Esp. intrans. + passive; middle perfect ptcpl. went from intrans to passive. 4th c.: growth of active perf. ptcpl. – now about equal to mid. Complex synthetic perfs. now go periphrastic: opt., subj., fut., 3rd pl. med.-pass.</td>
<td></td>
<td>5th c.-style HAVE+ aor. ptcpl. not used. HAVE + obj. + ptcpl as in Ancient Gk, but more frequent. Also HAVE + adjunct of time + participle. This is the construction that Mod. Gk. periphrastic developed from.</td>
</tr>
<tr>
<td>Koine + 1st centuries Mid.Gk.</td>
<td>Periphrastic perf. subj., opt., imper., infin. go out of use; synth. perf. indic. also losing ground at end of koine. Participle construction persists best, but aorist periphr. begins to be preferred over perf. periphr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modern Gk.</td>
<td>BE + passive ptcpl. (from middle perfect ptcpl) is the only perfect form to persist productively from Ancient Gk. It has hardly changed in meaning since ancient times. Perf. act. ptcpl. disappeared between 10th and 15th c.</td>
<td>Two constructions for perf/pluperf: a. HAVE + aor. infin. b. HAVE + perf. pass. ptcpl. a= preferred; trans. or intrans.; always verbal; but not used in the periphery. b = trans.; can be verbal or nominal. Used in the periphery, i.e.throughout Gk-speaking world, but low frequency. Parallel to Mod. Romance. a. often used in aorist sense, but HAD + aor. inf. used more, for pluperf.</td>
<td></td>
</tr>
</tbody>
</table>
a perfect for any given verb in Homeric Greek, the older ‘active’ way or the new, overtly middle way. A paradigmatic contrast had not yet developed.6

Then, beginning in the 5th century B.C., a new trend began to take shape across the Greek verbal morphology: a more fully delineated contrast of active vs. mediopassive categories began to appear. As a result, a need developed to express not only intransitive perfects, but transitive ones as well. Speakers expanded the originally intransitive category in several directions in order to be able to distinguish the new transitive interpretation from the old intransitive one.7 This expansion is reflected in two related innovations, both of which significantly impacted the Greek perfect and passive systems: the creation of the HAVE perfect, and the creation of the BE (medio)passives.

3.1 Creation of the HAVE perfect

The need for an explicit way to express a transitive perfect led to the creation not only of a new synthetic perfect, using a -k suffix,8 but also a new transitive periphrastic perfect, formed with HAVE + active aorist participle, alongside the old intransitive one formed with BE:

(8) Sophocles Antigone 22

(Kréon) tòn d’ atimáras ékhei.

(Kreon.nom) him PTC dishonored.nom holds,has

“(Kreon) has treated the other scornfully.”

This form is found earliest in the writing of the 5th century Tragedians, Sophocles and Euripides, as well as in Herodotus; it is used especially to create new perfects where none had existed before.9 The subject-orientation of the participle, indicated by its active status and agreement with the subject, implies a less literal, more grammaticalized meaning – a truly anterior meaning – for the verb phrase. I propose that we view this new anterior as a ‘derived stative’, parallel to the ‘derived intransitive’ status of the passive, since it gives stative qualities to events which do not naturally imply them, adding to the category, extending it, as well as incorporating elements from the eventive verbal categories like presents and aorists.

3.2 Creation of the BE (medio)passives

As new transitive perfect formations were developing, the old intransitive form, consisting especially of BE + middle perfect participle, took on a more explicit passive meaning, as did its synthetic counterpart, the middle perfect. This middle perfect, in fact, became the most important, most productive way to form a perfect in 5th century Greek (Chantraine 1927:105). It became so productive that even active
intransitive verbs were given a middle perfect. According to Chantraine (1927:98), the middle perfect kept its intransitive sense, its connection to the stative, while also expressing the passive.10

Diathetic contrasts were now being utilized and capitalized upon. It was here, then, that the framework for the development of the periphrastic perfect and passive of Europe was laid down, I claim, as a result of a larger trend towards diathetic precision in Greek:

(9) Homer, Linear B BE + any participle = intransitive
    (earliest: BE + perfect participle)

5th century B.C. HAVE + active aorist participle = transitive, active
BE + middle perfect participle = intransitive,
> esp. passive

With the introduction of a separate means for marking transitivity, the older markings could also be used to connote more than simple stative intransitivity. Now that it was possible for transitive verbs to become perfects, these transitives were available for use in the old intransitive construction as well, where they received passive interpretation. So, the expansion of the system in one direction also had repercussions upon the older remnants of the category. What I am claiming here is that the creation of a new HAVE perfect entailed the creation of a BE passive upon the old BE intransitive pattern. Thus, two separate categories were produced essentially from one innovation. As intransitives and mutatives, the unaccusatives simply followed the old BE pattern, without any need for passive interpretation; in the absence of any reason to view them as passives, they were perceived as perfects. They represent, in a sense, the oldest layer of the perfects, formally unchanged but semantically reanalyzed, like the HAVE perfects, as anteriors. The chronology of the actual attestations of these forms supports the validity of this assumption: the HAVE + AOR. PART was found especially in the 5th century BC; the new anterior use of BE + PERF. PART and the new passive interpretations of the BE + middle PERF. PART developed especially in the next century (Aerts 1967).

In sum, the most essential contribution of Greek to a rearrangement of its own (and ultimately, I claim, Latin’s) temporal-aspectual morphology was the introduction of this more fully-defined voice contrast, which HAVE helped articulate. This development, the new distinction of active vs. middle perfects, played a fundamental role in the formation of the periphrastic perfect and passive systems.
4. The role of HAVE in distinguishing BE perfect vs. BE passive

Maslov observes (1988:74–75) that the designation of a BE periphrastic as a perfect or a passive may depend more on the type of verb involved than on the syntactic or semantic force of the perfect vs. passive formations themselves:¹¹

BE + PPP of terminative verb → statal perfect (objective resultative)

(10) a. Latin factus est
done.PPP is
“It is done”

BE + PPP of non-terminative verb → actional¹² passive (non perfect)

b. OHG Min tohter ubilo fon themo tivuule givuê-g-it ist
“my daughter cruelly by the devil tortured.PPP is
“My daughter is cruelly tortured by the devil” (Tatian)

Or, more rarely, → actional passive perfect

c. Latin amatus sum
loved.PPP (I).am
“I have been loved, was loved”

Notably, when an active participle is used, the orientation shifts to the subject:

BE + active participle of an intransitive terminative verb → subject resultative

d. Gothic Uswahs-an-s is
grown-up.ACT.PART is
“He is grown up” (John 9:21, 23)

Early Slavic also illustrates the development of subject-orientation, created by means of an active, resultative participle:

e. Old Polish Bo-cie-m siê cala darowala
for-thee-1sg(encl:<BE) refl entire gave.res.ptcple
“For I gave myself wholly to thee.” (Andersen 1987:28)

But, even more germane to the present discussion is Maslov’s further comment on the semantic development of BE forms: “Later on, all types of combinations develop actional meaning, which becomes dominant in regular perfects of the ‘be’ type” (1988:75). No explanation is given for this development of anterior value of these BE forms. What I am suggesting here is that it was the introduction of the HAVE auxiliary in Greek which generated subject orientation and, with it, new anterior, actional meaning for these older BE forms. Maslov, then, has hit upon an
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important insight in noting that the BE passives and perfects are semantic variants of the same construction, in some sense, but this insight is not sufficient without the additional realization that the development of actional meaning among the BE forms needs the introduction of some subjectivizing force – either an active participle, as in Slavic, or something like a HAVE auxiliary, as in Greek. The BE forms did not just develop into perfects, as Maslov claims; they had some help from the parallel HAVE.13

5. ‘Cluster of periphrastics’ & subject orientation

Using Dixon’s (1994) system of marking functions of arguments, we can summarize the innovative system that Ancient Greek devised in the following way:

(11) A + HAVE + active participle + obj. = perfect
S + BE + mediopassive participle = perfect
O + BE + mediopassive participle = passive

What is important to notice is that there is a single underlying principle detectable in all three of these patterns; that is, they all conform to a sort of syntactic template consisting of the elements Subject + Aux + Participle, with subject-orientation of the participle, whatever its semantic value. There is semantic cohesion across these three types of periphrastic constructions, created especially by the value of the participle, but the real principle behind the creation of what we may call this ‘cluster of periphrastics’ is syntactic:

(12) Template: Subject Aux Participle
A, S, or O H or B active or (medio)passive
subject-oriented

The overriding principle which governs all three of the structures in (11), besides the fact that they are constructed with similar elements, is their subject-orientation. Thus, periphrastic passives and actional perfects were created from the same impetus – both are newly constituted categories, more explicit expressions for concepts that were already present in the language, but which were previously not distinct, not focused upon.

The parallels which exist between perfects, resultatives, and passives have been noted by a number of scholars.15 Comrie (1981) provides several important insights concerning the semantic and pragmatic relationship of perfect to passive. He notes, for example, that while perfects in the languages of the world tend to show patient-orientation, some languages have developed more subtle, variable systems of orientation. For example, in Nivkh, when transitive verbs form perfects, they
show orientation towards the affected entity: whatever is affected by the action of the verb will be moved to subject position, a -\textit{yota}- affix will be added, and the agent will be removed.

(13) a. \textit{Umgu \ t’us th-a-d’}.  
Woman meat roast
“The woman roasted the meat”

b. \textit{T’us \ ha- yota -\textit{d’.}}  
Meat has been roasted
“The meat has been roasted” (Comrie 1981:76)

Thus, both a passive and a perfect are being formed simultaneously, not unlike the situation found for the Latin perfect passives. The role of the passive and that of the perfect are shown to be quite similar: both create resultative states, and both are oriented towards the affected entity, usually a patient.

However, these examples point to a crucial difference between the perfect in (13) and the ‘actional perfect’, the anterior, the present perfect of the modern-day western European languages. In the European perfect, in spite of the fact that remnants persist of earlier patient-orientation (e.g., in agreement patterns), the present-day orientation of the participle is not towards the patient, but towards the subject:

(14) French \textit{il a écrit une lettre}
German \textit{er hat einen Brief geschrieben}
English \textit{he has written a letter}

The orientation has been realigned, so that the participle is functioning as if it were an active aorist participle now, just as in Ancient Greek: \textit{grápsas ékhei}. This fact is the crux of our discussion here: resultatives and passives are extremely similar, formally and semantically, but anteriorites have moved into the range of verb tense, as the copula or possessive element becomes a true auxiliary, and the adjectival participle moves into the role of matrix verb, that is, as grammaticalization occurs. The stative/resultative value of the construction persists, but the focus is no longer on the affectedness of the patient. That is, the affectedness of the patient continues to exist, but it is no longer the point. Much more important is the new orientation of the verb phrase towards the subject,\textsuperscript{16} a focus which I claim was ultimately fostered by the introduction of HAVE + AOR. PART in Greek.
6. Developments in Latin: the role of deponents

Having explored the important role of more explicit voice distinction, and the implications of this development on the extension of periphrasis in Greek, we can now turn to an examination of the possible role Greek played in helping shape Latin periphrasis. Most classicists prefer to see the development of the Latin perfect and passive systems as self-contained and motivated from within Latin. One candidate within Latin which might have served as a source for the perfect/passive innovation is the deponent category. The deponents of Latin, along with those of Celtic, correspond to the IE media tantum verbs (Ernout 1909:4); hence, they are passive in form, but are construed as active in meaning:

(15) Middles and deponents  

<table>
<thead>
<tr>
<th>Greek</th>
<th>Sanskrit</th>
<th>Latin</th>
<th>Old Irish</th>
</tr>
</thead>
<tbody>
<tr>
<td>hépetai</td>
<td>sácate</td>
<td>sequor</td>
<td>sechur</td>
</tr>
<tr>
<td>“follows”</td>
<td>“follows”</td>
<td>“I follow”</td>
<td>“I follow”</td>
</tr>
<tr>
<td>gignomai</td>
<td>nàscor</td>
<td>gainiur</td>
<td></td>
</tr>
<tr>
<td>“I become”</td>
<td>“I am born”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mémnémai</td>
<td>mányate</td>
<td>re-miniscor</td>
<td>-moiniur</td>
</tr>
<tr>
<td>“I call to mind”</td>
<td>“thinks”</td>
<td>“recall to mind”</td>
<td>“I think”</td>
</tr>
</tbody>
</table>

Deponents would seem to be an appropriate starting point for passive participles taking on active interpretation. But were the deponents responsible for this development, and were they somehow capable of generating, through their connection with the active, a HAVE auxiliary and subject orientation, both of which are characteristic of Romance perfect systems? As I see it, what would be most crucial for an internal, deponent-based explanation for the development of the HAVE perfects would be clear signs of primacy of the deponents in the formation of periphrastic suppletive forms. What would be most detrimental to this claim would be, for example, evidence for Greek influence on the deponent system alongside that of the perfects, with the deponents serving as a conduit for influence from, say, the semantically similar Greek middles. On both counts, I believe the judgment comes down in favor of external influence. In what follows, we will rely especially on Flobert’s authoritative work (1975) to explore the possible role of the Latin deponents in shaping the periphrastic systems of Latin.

6.1 Evidence from Celtic

The Latin deponents have remained close to the passives throughout their history. It is clear that the creation of deponents and passives in Latin is part of an old tradition. The most ancient deponents, according to Flobert (1975:590), are in-
transitives which are “souvent superposables à des passifs”: cônor “try”, lâbor “slide down”, liquor “dissolve”, morior “die”, queror “complain”, orior “rise”, sequor “follow”. The construction is also found in Osco-Umbrian, both in synthetic and in periphrastic form (Oscan LAMATIR, Umbrian future anterior pudito fust). Thus, the tradition of using both the more archaic r-passives and the more innovative t-suppletion is itself undeniably old. However, what is especially telling for our purposes, as we attempt to sort out the primacy of the deponents or the passives with regard to t-suppletion, is the distribution found in Celtic: in Old Irish, only preterit passives have t-suppletion, while preterit deponents have a more unified paradigm, being marked, like the present deponents, with -r.

(16) Old Irish preterits

<table>
<thead>
<tr>
<th>Passive</th>
<th>Deponent</th>
</tr>
</thead>
<tbody>
<tr>
<td>suidigthe, -suidiged</td>
<td>“was placed” (t &lt; *to)</td>
</tr>
</tbody>
</table>

(Flobert 1975:480)

In Celtic, then, it is not within the deponent category that this periphrastic innovation was occurring, but in the preterit passives. This fact suggests that the deponents were imitating the passive paradigm, not creating it. While it is not necessarily the case that Latin followed the same pattern of development, it should at least be recognized that the active status of the deponents does not guarantee their suitability as a model of active usage.

6.2 Greek influence on Latin deponents

With regard to the second argument, of possible influence upon the deponents from Greek, there are few direct borrowings found in Plautus, but a number of calques exist, both morphological (commorior) and semantic (congrátulor), with some denominative deponents being formed directly from Greek borrowings. Greek influence continued to grow so that, by Cicero’s time, a proliferation of the use of passive transitive deponents, with past participles, had appeared. This was largely due to “l’élaboration de la langue de la rhétorique et de la philosophie à l’image du modèle grec” (Flobert 1975: 589).

By Tertullien’s time (c. 160–240 A.D.) large numbers of new deponents had been created, clearly, again, on the model of Greek. Frequently, a Greek stem was simply given a Latin suffix: parabolar, architectonor, etc. The Greek origin is very clear in the prefixes, e.g., inoperor = Gk. energoûmai (Ernout-Meillet 1959–1960:466). What is remarkable about this calquing, as opposed to that of earlier times, is how strong the external influence actually was: almost half the new creations came from Greek. Interestingly, Flobert notes that the voice used in Greek had no influence on the voice distinctions found in Latin; that is, the new Latin de-
ponents did not copy the activeness or middleness of the Greek model. It would clearly not be correct to argue, for example, that the deponent category derived from Greek, or that the deponents were intimately tied to Greek throughout their history, or even that Greek middles had a special influence on their Latin counterparts. The Romans did not compare their deponents to those of Greek, and few examples exist of deponentization coming directly from the Greek middle (Flobert 1975:578). But what does seem clear is that Greek influence did have a verifiable impact on the shaping of periphrastic formations within the deponents as well as the passives, especially at times of most intense contact and influence.

The views of Pisani (1981:440) are illuminating here: he regards the calquing of the periphrastic perfects from Greek as having been accomplished through a recognition of an exact equivalency of the Greek BE + perfect participle construction and the Latin deponents, and alongside this, a realization that the corresponding transitive form using HAVE + participle was “bell’e pronto.” According to this view, the deponent would have indeed played a role in the formation of the perfect in Latin, but this role would have been that of a nexus with its equivalent in Greek, as a point of contact, rather than as a source internal to Latin.

7. ‘Greek accusative’

One final piece of evidence pointing to the role of Greek in the development of the periphrastic system of Latin is provided by the ‘Greek accusative’ in Latin, a construction which combines a PPP with an accusative object, thus revealing a new, more active interpretation of the participle:

\begin{align*}
(17) & \text{“Greek accusative” in Latin} \\
& \text{Plautus: } inditus\ldots pallam \\
& \quad \text{put.on.PPP mantle.FEM.ACC} \\
& \quad \text{“having put on a mantle”} \\
& \text{Lucretius: } percussi membtra timore \\
& \quad \text{struck.fortibly.PPP limbs.NEU.PL.ACC by.fear.ABL} \\
& \quad \text{“having struck the limbs with fear”} \\
& \text{Virgil: } saturata dolore \\
& \quad \text{saturated grief.MASC.ACC} \\
& \quad \text{“grief-filled” (Flobert 1975:485–486)}
\end{align*}

These participles, being passive, should not be able to take direct objects, but their diathetic range has clearly been extended. This construction can, in fact, serve as a valuable metric for us in showing us the extent to which PPPs, and, with them, the perfect construction, have ‘activized.’
The adoption of this construction by prose writers lagged behind that of the poets; it was first used in Caesar’s *Bellum Africum* (1st century B.C.), and was later used by Pliny (1st century A.D.), and especially by Tacitus (b. c. 56 A.D.) and Apuleius (b. c. 125 A.D.) as well as by the Christian writers, especially Tertullien (c. 160–240 A.D.).

The oldest examples (cf. Plautus in (17)) referred to clothing worn, but were then extended to body parts, ornamentation of the body, and on into ‘brutal actions undergone’, objects with spiritual relevance, and other extensions. The construction eventually became quite popular in poetry and artful prose, and was extended substantially to adjective constructions using the -*tus*, probably in imitation of Greek (Flobert 1975:485). Flobert explains the importance of this innovation:

> Le latin a indubitablement innové et l’emploi exclusif du verbal en -*tus* au parfait passif ou déponent en a fait un vrai participe; comme le passif peut être transitif dès le début (cf. *complector*), le participe en -*tus* a profité de cette option.

(Flobert 1975: 486)

He goes on to mention that the Greek accusative allowed Latin speakers to construct a tight, well-structured system of stylistic variations, “incontestablement pour rivaliser avec les Grecs” (1975:486). The construction spread from the passive and the perfectum into the infectum, and, in Late Latin, even into the reflexive, where it was used to translate Greek middles (Flobert 1975:492). While Flobert is reluctant to account for the innovation as due to Greek influence, since the use of the accusative does not coincide well in the two languages, he does grant that Greek could have provided the stimulus for its adoption:

1. *Il. 5, 186* nephélē eilumēnos ὀμος
   “(one of the immortals), his shoulders wrapped in cloud”
   is translated in Horace Od. 1,2,31 as *nābe... umerōs amictus*
2. *Il. 14, 175* khróa... αλειψαμένη
   “anointed her body”
   is recalled in Horace A.P. 277 *peruncti...ōra “thoroughly anointed the face”*

This construction, then, provides us with two important insights: it shows us the degree to which the periphrastic construction has come to “souligne l’initiative du sujet” in a move toward transitivization (Flobert 1975:492), and it indicates the role that Greek models played in that innovation.

To sum up this analysis of the role of Greek influence on Latin perfects and passives, then, we can say that a fair amount of evidence exists to suggest that Greek played a substantial role in the development of the periphrastic systems which eventually emerged in the Romance languages. More evidence for this claim,
including sociolinguistic evidence concerning the prestigious role that Greek language and culture played in Roman society, is presented in Drinka (forthcoming).

8. Larger considerations

Before concluding this discussion, we must address two broader, interrelated issues concerning how these insights fit into a general picture of passive and perfect development in the languages of the world:

– To what extent do each of these innovations, the development of the perfect and the development of the passive, represent a truly European phenomenon? If one of them is not exclusively confined to European provenance, can they still be viewed as connected innovations?

– How rare are European-style periphrastic perfects and passives in the languages of the world? That is, to what extent should this type of periphrasis be viewed as the unmarked, expected way to form perfects and passives?

8.1 PPP as an Indo-European construct

With regard to the exclusiveness of perfect and passive formation to Europe itself, Haspelmath (2001:1497) suggests that the formation of a passive with a past passive participle, rather than being a more recent European development, is an Indo-European geneological feature, as evidenced by the fact that eastern European and Indo-Iranian languages form participial passives which are quite similar to their western counterparts:

(19) Russian

<table>
<thead>
<tr>
<th>Russian</th>
<th>English</th>
</tr>
</thead>
</table>
| Konservacija była zakončena rabotnikami | conservation was finished workmen.

“The conservation (works) have been finished by the workmen.”

(20) Hindi

<table>
<thead>
<tr>
<th>Hindi</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>vah dekhā gayā</td>
<td>He was seen</td>
</tr>
</tbody>
</table>

According to this line of reasoning, European passives would simply be following an ancient, Indo-European pattern of passive formation.

What is important to note, however, is that in both Slavic and Indo-Aryan, these passives are kept distinct from the perfects, either by the use of a different auxiliary or a different participle. Considering first Slavic, perfects and passives are
formed with distinct participles from their earliest attestations: the passives use the past passive -(e)n/-t participle, as in (19), while the perfects use the active resultative l-participle, as in (21):

(21) Old Russian

kop'ь umelь jestь, a ja živь
horse died is, but I (am) alive
“The horse has died, but I am alive.” (Galton 1987:259)

The Slavic languages, then, like Ancient Greek, had more elaborate morphological resources with which to construct distinct systems of passive and perfect than the western European languages did. Romance and Germanic languages had only one participle at their disposal for the formation of both categories. As mentioned earlier, the western European languages situated the differentiation within the auxiliary, rather than within the participle. The claim put forward by Haspelmath that IE languages tend to form passives using PPP’s is in no way contradicted here, but the implication that the European languages therefore did not innovate in any remarkable way in the formation of their passives does not take into account, for example, the innovative separation of passiveness from perfectness in the Romance languages, in contrast to the older non-distinctness of the two categories in the perfect passives of Classical Latin.

Turning our attention to Hindi, we find that different auxiliaries have been adopted, as in the west, for use with the PPP (GO for passive, ARISE / STAND for perfects).

(22) Sanskrit > Middle Indo-Aryan > Late MIA

āgato ‘smi āgato ‘mhi gayau acchai
come—pp BE-1SG come—pp BE-1SG go—pp ARISE-copula
(Bubenik, forthcoming)

The fact that the PPP can function as a marker of both perfect and passive in Indo-Aryan, reflecting, as in Europe, its semantically-complex source, should, again, not be construed as a sign of non-development in the west. The ARISE / STAND copulas in India, being specialized for aspect and tense but not voice, do not cover the same semantic ground as the BE/BECOME copulas of Europe, which mark temporal-aspectual as well as voice distinctions. It should also be noted that the HAVE auxiliary is not used to mark Indo-Aryan perfects. This fact adds support to the argument that there is no necessary universal connection between HAVE and the anterior.

In sum, as indicated in Section 2.1, PIE provided its descendents with the potential tools for the development of periphrastic passives and perfects in the form of its multivalent verbal adjectives in *-to-/no-. The various languages took advan-
The fact that Europe chose a unified solution for passives and perfects distinguishes it from the rest of the Indo-European family.

8.2 The rarity of the European periphrastic type

The findings of Bybee et al. (1994:64–65, 80) support the claim that European-style periphrastics, both perfect and passive, are rare outside of Europe. With regard to the auxiliaries, a fairly large number of languages in their survey use stative elements to form auxiliaries for anteriors, including Balochi (Iranian) and Maithili (Indic), but only three of these languages use HAVE as this stative auxiliary – two Western European languages (Modern Greek and Danish) and Agau (Cushitic), which uses a bound gram meaning “have with oneself” to mark the category.

Likewise, with regard to the use of participles to form perfects, several languages in the survey form European-style anteriors and resultatives using past/passive non-finite markers with person/number endings, such as Udmurt (Uralic) and Buriat (Altaic), but most languages with periphrastic anteriors use a simpler past or perfective element for their participle, as in Kui (Dravidian) or Tigre (Semitic) (Bybee et al. 1994:56). The development in Europe is thus quite different from that seen in the more frequent periphrastic anteriors: the complex semantic value built in to the IE *-to/-no verbal adjectives produced a more complex descendent form, one which did not automatically sort itself out into anterior and passive senses.

Finally, as mentioned earlier, the use of a past passive participle to form a passive is remarkably rare in the languages of the world, and, in the Gramcats sample (Bybee et al. 1994; Haspelmath 1990), only co-occurs with the formation of anteriors in a small number of other Indo-European languages. The connection of passive and anterior to resultative is not surprising or remarkable, but it turns out that the ‘cluster of periphrastics’ described here – the formation of anteriors with HAVE and BE alongside passives with BE/BECOME, both with past passive participles as matrix verbs – is extremely rare in the languages of the world. This fact makes the explanation presented here, of a unified innovation being ultimately responsible for the distribution of these two categories among the languages of Europe, more plausible than an explanation relying solely on ‘hodological’, path-oriented pressures and independent development.
9. Conclusion

We can summarize the developments that have been described here in the following way: Greek had an independent perfect category, but no separate way of expressing the passive, except for aorist passives. Latin had an independent passive category, but no separate way of expressing the anterior perfect. Both languages devised periphrases using BE which allowed the participles to express their own basic meaning. But then Greek took a step beyond: as a result of a trend to fill out active and mediopassive paradigms, it created a new dimension for the perfects by adding a new element to the system. The insertion of the auxiliary HAVE as a transitivizing element allowed a new set of contrasts to develop, and served as the impetus for the formation of a periphrastic BE perfect separate from a periphrastic BE passive. Latin, in developing its own perfect category separate from the passive, took over not only the concept of a HAVE auxiliary from Greek, but also the ability to interpret its past passive participle as non-passive when needed for the perfect, or as non-perfect when needed for the passive. It is no coincidence that the periphrastic perfects and passives of the modern European languages resemble each other so thoroughly: they were all, in some sense, shaped by the same set of innovations, inherited or copied from a Latin pattern, based ultimately on the model of Greek. The trend towards diathetic explicitness, the introduction of HAVE as a marker of the anterior, the formation of subject orientation as a key characteristic of the ‘cluster of periphrastics’, – all of these events in Greek helped lay the foundation for the formation of the periphrastic perfect and passive, and for the spread of these patterns from this incipient point both across the verbal paradigm and across the map of Europe.

Notes

1. Or, according to Maslov’s more precise characterization (1988:71), subjective-resultatives, for they refer to “the denotation of a subject’s state that results from an action performed by the subject himself.” See Wackernagel 1904; Reichelt 1909:309; Renou 1925; Chantraine 1927; Schmidt 1964:1–2; Gamkrelidze & Ivanov 1995:257. The term “anterior” refers to an action or state which began in the past and which is still relevant (Bybee, Perkins, and Pagliuca 1994), fairly equivalent to the traditional definition of the “present perfect”, or to Maslov’s “actional perfect” (see Note 12).

2. See Bakker 1994 for an in-depth look at the variable levels of passiveness and transitivity implied by the middles. Bakker adds (1994:27) that the name “passive aorist” is inappropriate, since these suffixes only mark passiveness in particular class of verbs. It is better to view these, he says, as markers of low transitivity, as opposed to the s-aorists, which mark high transitivity. Haspelmath (1990:51–52) views these stems as “inactivizd.”
3. To be more precise, periphrastic passives existed in the perfect indicative and subjunctive, plus perfect indicative and subjunctive, and the future perfect – all connected with and as yet inseparable from the perfects.

4. In Romance, the PPP signifies one meaning at a time: in BE + unaccusative vb. constructions, the PP has past value; in those with BE + transitive vb., it has passive value.

5. Of the verb types which appeared in the synthetic stative perfect in early times (e.g., those expressing mental activities, feelings, physical states, movement, development, possession, etc.), only the latter category, along with a few additional verbs, could take the accusative (Chantraine 1927:8–11).

6. However, a predilection for passive interpretation among these new perfect middles may also be detectable even earlier than this. As Smyth (1920:394) notes, “In Homer there are more perfect middles used passively than any other middle tenses.”

7. Traditional studies of the IE perfect (e.g., Wackernagel 1904; Renou 1925; Chantraine 1927) refer to this new semantic value of the perfect as “resultative.” However, in the recent typological literature, that term is used to refer to “those verb forms that express a state implying a previous event” (Nedjalkov & Jaxontov 1988:6), often taking the shape BE + PPP, but distinguished from the passive in including intransitive as well as transitive verbs. Because the most crucial element of the new “resultative” in Greek was the presence of an accusative (Chantraine 1927:6), we will refer to this innovation as producing new transitive forms, and will reserve the term “resultative” for the more precise typological definition. What is unfortunate about abandoning the traditional designation “resultative,” however, is that the anterior sense also implied by the term (Chantraine 1927:152) is no longer overtly recognized. Reference to the anterior will simply be added here where the situation warrants.

8. “La création du résultatif et son extension marquent au IVe et au IIIe siècle l’apogée du développement du parfait” (Chantraine 1927:253). It should also be noted that the development of the productive category of factitive s-aorists was part of the same trend; this development is regarded as one of the factors which led to the rise of the “resultative,” transitive perfects (Chantraine 1927:121).

9. Of 51 different verbs which use the HAVE + aor. ptcpl. periphrasis in Aerts’ survey (1967:159), only 3 had a perfect attested before the 5th century In 34 instances, these periphrastic perfects are the first uses of the perfect for these verbs.

10. Chantraine notes the irony of the fact that the semantic value of the IE perfect was kept, but primarily by means of middle perfects which were “précisément exclu du parfait indo-européen” (1927:117–118). Thus, the increased productivity of the middle perfects coincides with the increased popularity of the transitive perfects.

11. Gronvik (1986:13) makes a similar observation, focusing on the role played by perfectivity vs. imperfectivity. It would probably be possible to construct a passive-perfect continuum along which these BE forms could arrange themselves, similar to that described by Hopper and Thompson (1980) for transitivity or by Bakker (1994) for diathesis and transitivity.

12. In an actional perfect, “the central role is played by some action proper that results in some consequences or traces and brings about a particular situation” (Maslov 1988:65): “I have bought this book” = “I have it, and it’s now somehow important that I bought it.”
13. In addition to the chronological evidence from Greek mentioned above, further typological evidence that HAVE perfects may foster true BE perfects comes from the modern development in southwest Macedonian dialects of a BE + PPP construction, originally (and unsurprisingly) resultative in meaning, but now taking on a new perfect meaning, precisely in the same location where a HAVE + PPP also denotes anterior meaning (Graves 2000:489; Lindstedt 2000:377).

14. Or, granted that passives are derived intransitives (Dixon 1994:146), this O might be more precisely rendered as S.

15. Johanson (2000:113), for example, points out the “diathetic versatility” of constructions like “is closed”: the first actant can be recognized as subject, creating a resultative interpretation, but, if the verb is transitive, the second actant may function as subject “without any other overt voice shift”, leading to an interpretation of “is closed” as “has been closed,” a subtle shift towards the passive without overt marking. He goes on to add that, in sentences like these, “either the first or the second actant of the basic valency pattern may turn up as first actant. . . The decisive criterion for the choice is which participant is most clearly affected by the transformation.”

16. This explanation centers around essentially the same insights as those presented in Vincent 1982, as well as those of Salvi 1987, but from a diachronic perspective.

17. Middle perfect, used as a present by early writers.

18. However, it should be noted that all of these early Greek-based innovations used Latin processes exclusively – philosophor, sycophantor, etc. (Flobert 1975:89).

19. Kiss (1982:24) describes the formal confusion which developed between actives and deponents in Late Latin thus: “Les oscillations morphologiques se font tellement nombreuses que l’on peut parler d’un véritable luxe de la désinence passive apparaissant sans motivation syntaxique ni sémantique précise.” Nausester (1907) presents a rich array of comparative data concerning the Latin deponents and passives throughout their history, finding the former to be about twice as frequent as the latter in Plautus, and the latter seldom used in texts reflecting the natural speech of the common folk, but rather in the language of the upper classes. The deponents, too, were found especially in the writing of the noblest poets (Nausester 1907:143, 152, 160).

20. It should be mentioned that in the written record of Latin, the full activization of the deponents did not occur until the 8th c. AD, only shortly before the Latin written record showed the reinterpretation of the perfect passive as a present, as seen in the Romance languages (Flobert 1975:587). These changes in Latin documents clearly represent changes that had already occurred in the spoken language; they appeared too late to be truly indicative of the process which led to the creation of the perfects and passives. The key steps in that development must have occurred centuries before.

21. The more expected ablative construction continued to exist alongside this Greek accusative, focusing on the resultant state, rather than on the initiative of the agent (cf. Lucr. in (17) above).

22. Hindi uses the auxiliary GO to mark the passive, but earlier stages of Indo-Aryan used BE, which was regularly deleted in the past tense. See Bubenik (forthcoming) for a detailed
analysis of the development of periphrasis in the diathetic and aspectual systems of Indo-Aryan.

23. There are, to be sure, a number of cases where Slavic languages have developed HAVE perfects with passive participles, e.g., Bulgarian 

\textit{Imam sgotveno} ‘I have cooked’ (using a lexical HAVE), similarly Slovak \textit{Mám polievku uwarenú} ‘I have the soup cooked,’ Russian (NW dialect) \textit{U kogo zdes’ nali-t-o?} lit. ‘At whom here spill-PP (neut.)?’ ‘Who has spilt (water) here!’ (using an impersonal Slavic-style BE-possessive). In Drinka (forthcoming) I claim that this adoption or calquing of HAVE + PP is due to fairly recent areal influence from Greek and the western European languages. It should also be noted, however, that some convincing evidence exists for internal development of HAVE forms in the oldest layers of Slavic (Danylenko 2002).

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The grammaticalization of movement

Word order change in Nordic

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1. Introduction

It is a common assumption that the word order rules have changed radically from Old Norse to the modern Mainland Scandinavian languages. Since word order is closely connected to discourse functions, changes in word order patterns from one stage to another in the history of a language should be studied in a functional as well as in a formal perspective.

The aim of this paper is to demonstrate how a functional and a formal explanation of diachronic change may supplement each other. I will examine a set of word order changes in the history of Scandinavian, which will be demonstrated by contrasting Old Norse (ON), the best attested dialect of Medieval Scandinavian, and modern Norwegian (MN), a Mainland Scandinavian language (or dialect), and a direct descendent of ON.

The notions of grammaticalization and reanalysis have sometimes been opposed to each other as alternative modes of explanation in diachronic syntax. One major difference between these two concepts is supposed to be gradualness; while grammaticalization is seen as a gradual process in the language (e.g. Hopper & Traugott 1993:xv), reanalysis is an abrupt change from one individual grammar to the next, as argued by e.g. Lightfoot (1999:83 – where, by the way, the term ‘reanalysis’ does not occur at all). As pointed out by Kemenade (1999), this distinction between grammaticalization and reanalysis probably has more to do with the linguistic schools of thought within which these terms have been used than with really alternative explanations.

The notion of grammaticalization is not totally separated from the notion of reanalysis, however. Indeed, Hopper and Traugott state that “Unquestionably, reanalysis is the most important mechanism for grammaticalization” (1993:32), and
“It is best, then to regard grammaticalization as a subset of changes involved in reanalysis” (1993:50). The latter quote also reflects the common view within diachronic generative grammar. Thus conventional examples of grammaticalization, such as the change from, say, clitic to affix, can be seen as reanalysis of the morpheme boundary, accompanied by a relabeling of the bound morpheme. Or a lexical category can be reanalyzed as a functional category, as described by Roberts & Roussou (1999). Our present case of word order change represents grammaticalization of a third kind: there has been a reanalysis taking place of the characterization of a movement operation, from being more pragmatically conditioned to being more grammatically conditioned.

2. From pragmatics to grammar

Pre-theoretically, ON is said to have ‘free’ word order, while MN has a more ‘fixed’ word order. This means that certain ON word order patterns are no longer found in MN. In a fixed word order language such as MN, the position of syntactic elements is largely determined by the grammatical function of that element in the clause. Apart from topicalization (cf. Section 3.4), MN offers very few opportunities to move phrases within the sentence. The freer word order of ON is due to the fact that the sentence elements to a much larger extent can be ordered in accordance with principles other than grammatical ones; those principles are mainly discourse functional, or pragmatic. The development from ON to MN therefore implies a change from pragmatics to grammar, whereby pragmatically determined ‘free’ word order has been partly replaced by word order determined by syntactic rules. This is also a kind of grammaticalization: “The incorporation into the grammar of a clausal or phrasal ordering favored by some principle external to grammar is also referred to as ‘grammaticalization’” (Newmeyer 1998:231). As a natural continuation of Givón’s well known quote “Yesterday’s syntax is today’s morphology” (1975), he has demonstrated that yesterday’s pragmatics is today’s syntax (1979:208–209).

3. Word order change in Nordic

The clause structure of ON and MN will be represented as a hierarchical, binary branching structure conforming to the principles of X-bar syntax. The tree structure in Figure 1 represents the basic sentence structure in both ON and MN. The C-position is the position of the finite verb in main sentences and of the complementizer in subordinate clauses. Spec-AgrP is the canonical subject position.
Within the framework of this phrase structure, ‘free’ word order is made possible by the properties of movement operations. In ON, the following three factors cooperate to create the impression of ‘free’ word order:

1. Liberal ‘landing rights’
2. Adjunction
3. Head-to-specifier movement

I will return to a closer description of these factors shortly. While ON had pragmatically conditioned movement licensed by these three factors, MN allows fewer movements. The word order changes from ON to MN can then be described as a restriction of conditions 1–3.

3.1 Liberal landing rights: the subject position

The unmarked position of a non-topicalized subject is Spec-AgrP, that is the position immediately following the finite verb in main sentences, or following the complementizer in subordinate clauses.²
One summer it was told that a ship came from the sea (Gunnl 2.9)

In ON, this canonical subject position may also accept other categories. This gives us contrasts such as those in (2), with a direct object, and (3), with a time adverbial, in the same position. (2a) and (3a) are attested in ON, while the direct MN equivalents (2b) and (3b) are ungrammatical.

(2) a. ok finna hann aðrir menn á djúpi
      and find.3p him.A other men.N on deep
      “and if other people find it on deep water” (ML 147.13)

    b. * og finn honom andre menn på djupet
      and find him other men on deep.DEF

(3) a. sem nú hefir þú upp tekit
      which now have you up taken
      “which you have now taken up” (Flj 263)

    b. *som no har du teke opp
      which now have you taken up

This is an illustration of liberal ‘landing rights’ in ON, which no longer exist in MN. In ON the rule which moves elements to Spec-AgrP does not mention syntactic category. The movement is conditioned by discourse functional or possibly coding properties (such as the lack of weight or complexity). In ON, therefore, this position is apparently an A-bar position, which can serve as a landing site for different phrasal categories. The change that has taken place is thus an instance of grammaticalization of movement.

ON also allows the canonical subject position, Spec-AgrP, to remain empty, which again is unacceptable in MN.

(4) a. er dreginn belgr á hofuð honum
      is pulled skin-bag.N on head him.D
      “A skin-bag is pulled over his head” (Gisl 31.20)

    b. *Blir dregen ein sekk over hovudet på han
      is pulled a bag over head.DEF on him

In accordance with this ‘liberalism’, other positions are open to subjects, also. Our ON material offers evidence of subjects in the specifier positions of three different projections. Very often the subject has been moved to Spec-CP, in other words topicalized, as in (5).
In (1) the subject of the root sentence follows the finite verb, and the subject in the embedded clause follows the complementizer; both are therefore in Spec-AgrP. In (3a) the subject follows the finite verb in a subordinate clause. Assuming that the finite verb moves to Agr, the subject þú must be in the specifier position of a lower functional projection, TP. It is base generated in the specifier position of a lower VP, where the head is tekit, so it cannot be analyzed as being left in its base position. The subject aðrir menn in (2a) is also in Spec-TP, since it follows the object hann, which is in Spec-AgrP. In addition, the subject may occur in the complement position of V, as in (4a). As a fifth possibility, the subject may be in extraposition, as we will see below, cf. example (11).

In MN, on the other hand, the subject moves obligatorily to Spec-AgrP, and nothing else can move there, as can be seen from the unacceptable (2b), (3b), and (4b). The change can be described as Spec-AgrP becoming an argument position and a specific subject position.

Both in ON and in MN there is an entailment relation between a finite verb and a nominative/subject. In ON a nominative DP presupposes a finite verb, but not vice versa; finite sentences may lack a nominative. In MN the entailment is bi-directional; a subject DP presupposes a finite verb, and a finite verb presupposes an overt subject. Finiteness is not a very well defined concept, however. For languages like MN, other mainland Scandinavian languages, and English, it is usually associated with tense, since finite verbs have a past/non-past distinction. This is more problematic for ON, where certain infinitives also have a separate preterite form, such as mundu in (6).

Agreement can not be identified with finiteness in MN, since there is no subject-verb agreement. Neither is it possible to connect finiteness to semantic notions such as propositional content, assertions, or the like, since in ON the infinitive can be used in clauses that express assertions, as in (6), while on the other hand, both in ON and MN, as in English, finite verbs are used in clauses without truth value, as e.g. conditionals.

"If I tell you the dream, then you must interpret it" (Gunnl 4.2)
It seems that finiteness can best be associated with root sentences: it is an obligatory feature of root sentences (but it is not exclusively associated with them, cf. (7)). A typical North Germanic feature is that C is always lexicalized, and the specific property of root sentences as opposed to embedded clauses is the content of C, where root sentences have a tensed (= finite) verb, as opposed to embedded sentences, where C is occupied by a complementizer. Platzack (1998:92) motivates and justifies the feature finiteness in C in the following way: “The positioning of the finite feature in C is a necessary precondition for the cognitive processes of memory and conceptualization to anchor the utterance in time and space” (translated from Swedish by JTF). In addition to the utterance being anchored in time and space (sic?), the event is anchored to a protagonist, which is represented as a nominative DP.

In ON a nominative DP presupposes a finite feature in C. This is then a one-way entailment relation between finiteness and nominative. (In Section 4.3 below I will discuss the existence of pro in ON, whereby the entailment relation may be said to be bi-directional even in ON). In MN the subject in AgrP is obligatorily governed by the finite feature in C, and the entailment relation is bi-directional.

It has been assumed (e.g. by Holmberg & Platzack 1995) that the overt subject requirement in MN has to do with the loss of subject-verb agreement. Morphological agreement marking on the verb includes nominal features (φ-features), which can receive nominative case from C. This kind of explanation runs into several problems, however, both cross-linguistically as a possible universal, and in Germanic specifically. There are many notable exceptions to the generalization that a language with referential pro subjects has to have morphological agreement marking on the verb. Well known examples are East Asian languages such as Chinese and Japanese. On the other hand, there are Germanic languages, such as German, Icelandic, and even ON, with elaborate agreement marking but without referential pro. The change in subject representation from ON to MN does not primarily involve the disappearance of referential pro, but of non-referential and non-specific pro. The types of sentences where ON could lack an overt nominative subject but where MN requires a subject, are mostly those sentences where MN has an expletive subject det (8), or a non-specific subject (9).

(8) a. þar heitr núa Óðinsey í Fjóni
   there is-called now Odense in Fyn
   “There it is now called Odense in Fyn” (Hkr I.14.16)
   b. Der heiter det no Ódense på Fyn
      there is-called it now Odense on Fyn

(9) a. skal þat barn út bera
   shall.3s that child.A out carry
   “That child must be exposed” (Gunnl 6.4)
b. *Ein skal bera ut det barnet
  one shall carry out that child

The change from a non-obligatory nominative somewhere in the sentence to an obligatory subject in Spec-AgrP does therefore not seem to follow from a need for clarity or disambiguation after the loss of verb agreement. The introduction of an obligatory subject in Spec-AgrP is due to grammaticalization. The frequency of sentences with a subject in this position may at some stage have increased to the point where it was conceived as basic or obligatory. This is a functional explanation, which has its formal counterpart in the concept of reanalysis.

3.2 Adjunction: extraposition

Extraposition involves the right-adjunction of a phrase to a higher XP. In the case of subjects, the domain of extraposition is the entire sentence, or CP; extrapoosed elements end up at the extreme right of the sentence, and thus even an extrapoosed subject is high enough to c-command its trace, and so high up that a subsequent topicalization would lead to a violation of the binding conditions on movement; topicalization from extraposition would leave a trace not c-commanded by the moved element, and is therefore ungrammatical. (This can be shown on the basis of MN data, but it is not crucial to the present argument). (10) and (11) are examples of extraposition of a clausal subject and a DP subject, respectively. The a-sentences are attested ON examples, the b-sentences are MN equivalents. Note that (11b), with extraposition of a non-clausal subject in MN, is ungrammatical. (Besides the fact that Norwegian women are no longer ‘owned’ by their husbands.)

(10) a. þorsteini var sagt at fallnir væri búðarveggir hans
  "Thorstein was told that the walls of his booth had fallen down"
  (Gunnl 3.6)

  b. Det var fortalt þorstein at buveggene hans hadde

  (11) a. hana hafði átt fyrr þóroddr sonr Tungu-Odds
  "She had been married to Thorodd, Tungu-Odd’s son, before"
  (Gunnl 2.4)

  b. *Henne hadde átt før þórodd son av Tunge-Odd
For the ON sentence (11a) I will now propose the structure in Figure 2.

In both ON and MN, a clausal subject may be extraposed or right-adjoined. In MN, however, this rule of extraposition can only move a CP, while in ON it may affect any category.

When a CP is extraposed from subject position in MN, the expletive subject $det$ is inserted to fill the subject position, to meet the requirement of an overt subject. As we have seen, this requirement does not exist in ON.

Free word order, including the possibility of a sentence final subject, as in ON, is traditionally connected to the existence of morphological case marking. This insight can also be exploited in the attempt to give a formal account of the restriction in right-adjunction in Nordic. Let us assume that a DP is licensed either if it has overt case, or if it is m-commanded by a case assigner. Let us further assume that case assigners are lexical categories and C [+finite]. A case marking language such as ON will then license a DP position also where there is no m-command by a case assigner, such as in adjunction to CP (extraposition). In a non-case-marking language, such as MN, DPs can not be adjoined like this. CPs, however, do not require case, and can still be extraposed.
3.3 Adjunction: verb final order

In ON, both orders of verb and complement are common in main as well as subordinate clauses with a non-finite main verb besides a finite auxiliary. In MN, only VO order is found:

(12) a. hon hefir mint mik þeira hluta
    she has reminded me.A those things.G
    “She has reminded me of those things” (Hkr I.102.17)
b. ho har mint meg om dei tinga
    she has reminded me of those things

(13) a. hefir þú nokkura menn hitt í borg-inni?
    have.2s you.N any men.A found in town.D-the
    “Did you see anybody in the town?” (Eg 216.25)
b. *Har du nokon menn funne i byen?
    have you any men found in town.DEF

MN is consistently VO, but even for ON, VO can be postulated as the base order. Arguments for a uniform VO base in ON can be found in Hróarsdóttir (2000) and Haugan (2000). All ON word order patterns can be derived from a VO base. This is also in accordance with Kayne’s (1994) anti-symmetry hypothesis. Surface OV is the result of movement of the complement and left-adjunction to VP. In MN, a DP has to be governed, and can therefore not appear in an adjunction.

3.4 Head-to-specifier movement: topicalization

ON and MN are both verb-second languages, with a topic position preceding the finite verb in main sentences. In both languages, the topic position may be filled by any phrasal category, for example a DP in (14) and (15) (subject and object, respectively), a prepositional phrase in (16), and an adverb in (17).

(14) a. hann var sonr Sigvats
    he was son.N Sigvat.G
    “He was the son of Sigvat” (Nj 1.1)
b. Han var son av Sigvat
    he was son of Sigvat

(15) a. fjóra menn sendi hon fjógorra vegna í bygð-inna
    four men.A sent she four directions in district-the
    “Four men she sent in four different directions in the district”
    (Hkr II.43.4)
b. Fire menn sende ho i fire retningar
   four men sent she in four directions

(16) a. um sumar-it bjó-sk Porstein til pings
   in summer-the prepared-himself Throstein.n to assembly
   “In the summer Thorstein got ready to go to the assembly” (Gunnl 6.1)

b. Om sommaren budde Porstein seg til tinget
   in summer.def prepared Thorstein himself to assembly.def

(17) a. síðan reið hann til pings
   afterwards rode he to assembly
   “Then he rode to the assembly” (Gunnl 6.14)

This is movement of an XP to Spec-CP, triggered by discourse functional factors in accordance with general principles of information flow in sentences. So far the two stages seem to be similar in this respect. But in addition, ON also allows certain types of topicalization which are no more permitted in Norwegian. The head of a phrase may be topicalized by itself, as in (18a), where a verbal head is topicalized, and in (19a), where a preposition is topicalized. In MN, a head cannot be moved like this, (18b) and (19b).

(18) a. þakka viljam vér yðr
    thank.inf want.1p we you.d
    “We want to thank you” (Laxd 126.10)

b. *Takka vil vi dykk
    thank.inf want we you

(19) a. af hefr þá mik ráðit brekvisi við þik
    from have you.n me.a taught importunity.d with you
    “You have taught me not to be importunate with you” (Laxd 98.14)

b. *av har du meg lært mas pà deg
    of have you me taught importunity with you

This is in violation of presumably universal constraints on movement, whereby a head, X0, can only move to another X0 position, and not to a specifier position, which is an XP position.4

Furthermore, in ON, the topic position may be left empty in declarative sentences, as in (20a). An empty topic position in MN indicates a sentence question or a conditional clause. Thus (20b) is ungrammatical as a declarative main sentence.

(20) a. ganga hof stór ör útsjá-num
    go.3p seas.n big from out.seas-the
    “Big seas cut in from the outer seas” (Hkr 9.2)
b. Går store viker inn frå havet
   go big bays in from ocean
   “Do big bays cut in from the ocean?”

Here, too, there has been a restriction of possible topicalized elements, from XP, X_0, or Ø in ON, to XP only in MN. Verb first sentences, that is sentences with an empty topic position, are grammatically marked as interrogative or conditional in the modern language, while in ON they just have a particular discourse function, again a change from pragmatics to grammar. There is thus a striking similarity between the changes in the two specifier positions, Spec-CP and Spec-AgrP.

4. Supporting evidence

4.1 Anaphor binding

Since the subject is now always obligatorily present in one specific position, it has in turn become more visible. One consequence of this may be that the subject in MN has more distinct subject properties than the ON subject. For example, in MN the main rule is that anaphors are bound by something which is a subject at some level, whereas in ON this condition is much more relaxed. Thus the binding patterns in (21) would all be unacceptable in MN.

(21) a. Guðleikr fór um sumar-it í Austveg til Hólmgarðs
Gudleik.N travelled in summer-the in East-way to Holmgard
ok keypti þar pell ágætlig, er hann ætlaði
and bought there cloth.A excellent which he intended
konungi, til tígnar-klaða séi,
king.D for stately-clothes himself.D
“Guðleik travelled in the summer east to Holmgard and bought there excellent cloth which he intended for the king for his robes of state” (Hkr II.99.3)

b. Konungr mat Kjartan, umfram alla menn fyrir sakir ættar
king.N valued Kjartan.A above all men for sake family
sinnar,
his.RFL
“The king valued Kjartan more than all other men because of his family background” (Laxd 128.17)

c. eigi mátti frjalsa hann, frá dauða òll sín; konungleg seila
not could save him.A from death all his royal bliss.N
“All his royal bliss could not save him from death” (Barl 175.39)
In (21) there are ON examples of reflexives bound by non-subjects – and by DPs not in Spec-AgrP. (21c) is particularly remarkable, since the anaphor is within a nominative subject DP. The change in possible binding relations may be due to the fact that the subject is now more visible in its privileged Spec-AgrP position.

4.2 pro

A phonologically empty argument in ON can be represented as pro (cf. Section 3.1). When two sentences are conjoined, any DP in the second conjunct which is coreferent with a DP in the first may be omitted, that is, represented as pro, as in (22a). Now, it seems that pro has disappeared, not only from the subject function, but generally in Norwegian, since a similar occurrence of pro in MN is impossible, (22b).

(22) a. síðan flutti þeir þorgils lík-iti, upp með
    afterwards moved they Thorgils.N corpse.A-the up along
    á-nni ok grófu [proi] þar niðr
    river-the and buried there down
    “Afterwards Thorgils and his men moved the corpse up along the river and buried it there” (Hkr II.511.14)

b. Sidan frakta Thorgils og dei liket opp etter
    afterwards moved Thorgils and they corpse.DEF up along
    elva og grov det ned der
    river.DEF and buried it down there

In the modern language, the only argument phrase which can be omitted in the second conjunct is a subject coreferent with the subject of the first conjunct, as also illustrated in (22b). This kind of coordination does not require the postulation of pro, since it simply is a coordination of two VPs. While the structure of (22a) is as in (23a), (22b) has the structure in (23b) (both simplified).

(23) a. flutti þorgils líkitj ok [proi gróf proi niðr]

b. Thorgils [frakta liket] og [grov det ned]

5. Conclusion

Certain movement rules that were originally functionally conditioned have become dependent on formal categories instead, and have thus been grammaticalized. Functionally, this kind of grammaticalization can be seen as a result of reanalysis based on frequency of occurrence. In formal terms, free word order is made
possible by liberal 'landing rights', adjunction, and head-to-specifier movement. In ON, the adjunction of DPs was formally licensed by morphological case. The loss of case marking therefore seems more important than the loss of verb agreement in the history of Nordic syntax.

The change from 'free' to 'fixed' word order can be described both in a functional perspective and in formal terms. Instead of looking for one ultimate cause, I prefer to see this as a rewarding combination of the two approaches.

Sources

The Old Norse examples are taken from the following texts:

The Modern Norwegian examples have been created by live native speakers, mainly the author himself.

Notes

1. I wish to thank Helge Lødrup, Laila Sakshaug and two anonymous referees for valuable comments.
2. The following abbreviations are used for grammatical morphemes: A = accusative; D = dative; DEF = definite; G = genitive; INF = infinitive; N = nominative; P = plural; PRET = preterite tense; RFL = reflexive; S = singular. Grammatical morphemes are glossed only when relevant and when not appearing in the English word form.
3. This is the analysis assumed by Haugan, and also in Faarlund (forthcoming). Hröarsdóttir follows Kayne in postulating movement of the object to a functional node AgrP, concomitant with the minimalist program.
4. There is an alternative analysis of verb fronting as in (18a) based on Kayne’s (1994) anti-symmetry hypothesis. The pattern in (18a) could be the result of topicalization of a remnant
VP after object movement. This would be possible only in a language which allows OV patterns. Although this account would avoid the violation of a UG constraint on movement, there are certain problems with it. It does not explain why ON does not seem to have VP topicalization without object movement, since object movement is optional; patterns like (i) are not attested.

(i) *þakka yðr viljum vér
    thank you.d want1.p we

Nor does the anti-symmetry account explain preposition fronting as in (19a). That would presuppose a complement fronting also in PPs, which is less likely, since regular prepositions always precede their complements.

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Paths of development for modal meanings
Evidence from the Finnic potential mood

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1. Introduction

This paper introduces some findings from an empirical study on one Finnic mood category, the potential (Forsberg 1998, 2000), and deals with a few questions which have emerged as a result of this study. The objective of this presentation is to contribute to the discussion of the semantic development of modal meanings and categories. In their cross-linguistic study Bybee, Perkins, and Pagliuca (1994) identified a universal set of modal grammatical categories and suggested that there are universal regularities in their semantic development as well. Starting from the paths of development offered by Bybee et al., van der Auwera & Plungian (1998) sketched the semantic map of modality as representing cross-linguistically relevant synchronic and diachronic connections between various meanings or uses of modal markers. The Finnic potential mood offers an interesting ground for testing these hypotheses.

The Finnic (“Baltic-Finnic”) languages are a small subgroup of the Uralic language family, spoken in the Baltic region in Northern Europe. The major languages are Finnish and Estonian, which have vigorous literary languages; while the others, Karelian, Ludian, Vepsian, Inghrian, Votian, and Livonian, are smaller and endangered.

In this paper I will first describe my data and the major findings concerning the uses of the potential mood in Finnic languages (Section 2). I will then compare my findings with the descriptions given in the grammars and standard descriptions of the Finnic languages (Section 3). In what follows, I will discuss the hypotheses on diachronic relations between modal meanings by introducing my proposal concerning the semantic development of the Finnic potential mood, and comparing the hypothesis suggested in the cross-linguistic studies against my data (Section 4).
Since establishing the whole history of development in greater detail in this paper would take too much space, I will concentrate on those findings that are not mentioned in Bybee et al. or the other works and those that differ from the findings of the cross-linguistic studies in some respect.3

The potential mood is a grammatical verbal category that expresses modal meaning. It has two tenses. The present tense is formed by the inflectional suffix -NE-, and the past tense is formed by the auxiliary verb LIE- and the preterite participle. Specialists in Finno-Ugristics widely agree that the Finnic suffix -NE- can be traced to the Finno-Ugric proto-language (e.g. Collinder 1960:246; Hajdú 1987:244; Raun 1988:563).

2. The uses of the potential mood in the Finnic languages

The use of the potential mood has decreased in the past centuries in most Finnic languages (see Laanest 1982:238–239). It is still fairly common in certain contemporary varieties of spoken and written Finnish and certain dialects of Karelian, whereas, for instance, in present-day Standard Estonian, the potential mood is extinct. My data thus comes mainly from Finnish and Karelian. In Finnic languages other than Finnish or Karelian, the potential mood is not commonly used. It is rare in Vepsian and southern Estonian dialects, whereas in northern Estonian dialects and in Livonian it does not occur at all. In Votic and Ingrian, the use of the potential has been on the decline during the past century.

The empirical data for my study on spoken Finnish is drawn from the dialectal archives of the Finnish language. Most of the data has been gathered from the tape-recorded interviews organized by the Audio Recordings Archive of the Finnish Language in the 1960–1980s among the speakers of Finnish regional dialects; a smaller part has been drawn from the Lexical and Morphology Archives and from the field-notes taken by several individual researchers.4 My Karelian data is drawn from the printed Karelian text corpora, Karjalan kielen näytteitä I–III (published in the 1930s), Viinan kansa muisteelee (1958), Karjalan kieltä ja kansankulttuuria (1990), and Näytteitä karjalan kielestä (1994).5 Taken all together, the data consists of about 6,000 Finnish and 700 Karelian occurrences of potential verb forms in their linguistic contexts. This data has been supplemented by approximately 2,000 instances of potential verb forms gathered from Finnish folk poetry published in SKVR. The examples from the other Finnic languages have been compiled from previous studies and grammars.

In this section I shall consider the use of the potential mood in Standard Finnish, in Finnish dialects, and in Finnish folk poetry. Finally, I shall briefly look at the use of the potential mood in Karelian and the other Finnic languages. One of
my main findings is the fact that the use of the potential mood in spoken Finnish
and Karelian is fairly different from that of written Standard Finnish, and that its
use has been entirely different in some earlier stages of Finnish.6

2.1 Present-day Standard Finnish

The studies by Matihaldi (1979:91–94) and Kangasniemi (1992:174) have shown
that in present-day Standard Finnish, the potential mood occurs mainly in declar-
ative sentences where it conveys the meaning of epistemic probability. It is typically
used in formal registers (news texts, scientific texts) whereas in the spoken collo-
quial language it is used rarely. The utterances containing a potential verb form
function as epistemic judgments. Example (1), from the radio news, is cited in

(1) Sähköveturiasian käsittelyä jatkettaneen
   electric-locomotive-thing-gen discussion-part continue-pass.pot
   lähiaikoina.
   near-time-pl-less
   “The question of electric locomotives will probably be discussed further
   in the near future.”

This kind of use is the most frequently cited in grammars. Still, it seems to be a late
development.

The history of the use of the potential mood in written Finnish has not been
studied in detail, but some interesting findings have been reported in the literature.
According to Savola’s study (1987) on newspaper language, it seems that the use of
the potential mood in declarative sentences expressing probability had gradually
become generalised as recently as the past 150–200 years. In the earlier stages of
literary language, the potential mood was not so common, and was used in similar
ways as in regional dialects.

2.2 Present-day Finnish dialects

My study on the potential mood in Finnish regional dialects (Forsberg 1998) re-
vealed that its use has decreased during recent centuries, at least in the Western
dialects, and that there are certain dialect sub-groups in which it no longer exists
in present-day speech. On the other hand, the potential still flourishes in the East-
ern dialects and some of the Ostrobothnian dialects. It is to be noted, however, that
the potential mood does not have the same status as a carrier of epistemic mood
in dialects as it has in Standard Finnish. Dialectal use of the mood is noticeably
different from that of the standard language.
First of all, the syntactic contexts in which the potential mood is used are different. In the modern dialects the use of the potential mood is almost entirely restricted to 3rd person forms, and the use of the mood is more clearly associated with certain syntactic structures than in contemporary Standard Finnish. The potential mood is mostly used in interrogative sentences, represented both in wh-questions, as in example (2), and yes/no-questions, in (3) and (4), whereas declaratives containing a potential verb form are fairly infrequent (5). Secondly, it is noteworthy that the mood marker is rarely the only modal element in the sentence, which is the case in standard language. Rather, it is quite usual that the same sentence contains a modal particle or that the word order is somehow pragmatically marked.

(2) Minne lie mennyt.
where-to POT-AUX-3SG go.PTC
“I wonder where s/he has gone.”

(3) Eikö tuo antane.
NEG.3SG-Q that give-POT.CONNEG
“S/he will probably give.” (more literally, “Won’t s/he give?”)

(4) Antaneekohan.
give-POT-3SG-Q-CLT
“I wonder if s/he will give.”

(5) Totta tuo antane.
probably that give-POT-3SG
“Maybe s/he will give.”

Defining the function of these sentences suggests that they are speculative or polite questions and epistemic judgments (guesses, doubts, suspicions, etc.). Actually, many of them represent intermediate speech acts between prototypical questions and statements on the speech act continuum (for a discussion of the notion of this continuum, see Givón 1990:779–818).

Although the functions of these sentences are mainly epistemic, it is still problematic to define the meaning of the potential mood in dialects as epistemic, which would be typical in Standard Finnish. We are, after all, concerned with functions carried by larger formula-like syntactic constructions, especially with various kinds of interrogative structure that also contain other elements that participate in the formation of the modal meaning of the utterance. Were we to define the meaning of the mood marker in these constructions, it would best be characterised as a general root possibility. In declaratives, the root possibility sense usually allows for an epistemic interpretation.
The examples from (2) to (5) are from present-day Finnish dialects. What deserves attention here is the finding that the function of the potential is not clearly epistemic in the way it is in Standard written Finnish.

2.3 Earlier stages of spoken Finnish

Since we do not have authentic data from the earlier stages of spoken Finnish, any attempt to establish the diachronic dimension requires that we consider existing source material that mirrors spoken language. In my study it turned out to be useful to collect data from Finnish folk poetry, in which the potential mood is fairly frequent. Although the use of this data is not without its problems, I use it as representing the earlier stages of spoken Finnish.

The data shows that, in the earlier stages of spoken Finnish, the potential mood carried many non-epistemic functions, and had a full paradigm of personal forms. In terms of modality types distinguished by Bybee et al. (1994), the potential mood used to have ‘agent-oriented’, ‘speaker-oriented’, and ‘subordinating’ senses.

My data indicates that the potential mood was once a modifier of many speech act types being used in interrogative sentences expressing deliberative questions, as in (6), rhetorical questions (7), and requests (8). In interrogative sentences of this kind the mood marker expresses obligation (6), root possibility (7), or willingness (8) – senses exemplifying ‘agent-oriented’ modality.

(6) Mitä tehen?
what-PART do-POT-1SG
“What should I do?”

(7) Mistä tehen talkkunoa, vesi kylmä jauhot jäässä.
what-ELA make-POT-1SG talkkuna.PART, water cold, flour ice-INE
“How could I make ‘talkkuna’ [a special Finnish dish], [since] the water is cold, the flour is frozen.” (Implication: It is not possible.)

(8) Antanetko sie tuvaista, lainannetko lattiaista?
give-POT-2SG-Q you room-PART lend-POT-2SG-Q floor-PART
“Would you let me use your room?”

Other speech functions expressed with a potential verb form were commissives, hortatives, and predictions. The 1st person forms in declaratives carried the sense of intention, as shown in example (9); this sense can be traced in other syntactic contexts as well.

(9) Totta mä tuonne sentän käynen.
surely I there still go-POT-1SG
“Surely I will still go there.”
One of the early senses of the potential mood marker -NE- was that of the future; this being best seen in threatening predictions in incantations (examples (10) and (11)). Some of the 2nd person uses could be classified as imperatives as well.

(10) Siellä myös pysy.  
    there also stay-POT-2SG  
    “There shall you also remain.”

(11) Jos siellä päät nostat, ukko päät  
    if from.there head.ACC-PX2SG raise-2SG old.man head.ACC-PX2SG  
    särkenee.  
    break-POT-3SG  
    “If you raise your head, ukko [‘the old man; a god’] will crush it.”

In commissives, hortatives, predictions, and imperatives the modal sense of the potential marker involves the speaker’s will (volition) regarding the action. On this basis, these uses can be classified as ‘speaker-oriented’.

In addition to main clauses, the potential mood used to be very common in certain types of subordinate clause, especially in protases of reality conditions, as in (12). In these syntactic contexts the potential mood expresses subordinating senses.

(12) Kain orit uupuneewi, Nijn pane härkä etehen.  
    when stallion tire-POT-3SG then put.IMP.2SG ox in front  
    “If the stallion gets exhausted, put an ox in front [i.e. to pull the sleigh].”

These older meanings illustrated in examples (6)–(12) have almost completely disappeared from modern Finnish. However, some traces of them can be found in the Eastern dialects and in older literary language.

2.4 Karelian and the other Finnic languages

The analysis of the data collected from Karelian and the other Finnic languages supports the picture based on the analysis of Finnish in that the epistemic sense of the potential mood is best displayed in present-day Standard Finnish. The typically Standard Finnish probability uses of the potential mood in declarative sentences do not appear in Karelian or the other Finnic languages.

According to my data on Karelian, the most common syntactic clause type employing the potential mood in Karelian is the conditional clause (13). In addition to such clauses, the potential mood is used in interrogative sentences similar to those occurring in Finnish dialects.
Paths of development for modal meanings

Kun šoan rubl’oa andanet n’im mie l ähen.

“If you will give me a hundred roubles, I shall go.”

In the conditional clauses, the function of the potential is to express syntactic subordination and condition. Bybee et al. (1994:208) suggest that the environment of a protasis tends to bring out the full meaning of a modal marker. Thus, in example (13), the second person potential verb form tends to indicate ‘willingness’. It is to be noted, however, that in Karelian dialects (as well as in Vepsian, see Kettunen 1943:562) the use of subordinating conjunctions equivalent to English if or Finnish jos, which are specialised conditional protasis markers, is fairly rare, the most frequently used conjunction in protasis being kun, which is used in temporal clauses as well.

The conditional clause usage has been reported in other eastern Finnic languages as well. Example (14), showing that in these subordinate clauses there is not always a subordinating conjunction, is from Vepsian (Kettunen 1943:470). In these cases all the conditional sense is contributed by the mood marker itself (cf. Bybee et al. 1994:209).

In Estonian the use of the potential mood is restricted to southern dialects, folk poetry, and older literary language. My analysis indicates that the main functions of the potential in Estonian have been non-epistemic possibility and the subordinating sense. The mood has occurred mainly in declaratives, interrogatives and one complement clause type, that of indirect questions, in which its main function is to express the subordinating sense. Examples (15) and (16) are cited from Wiedemann (1875:473):

(15) tähele minägo lähen
star-all I-clt go-pot-1sg
“zu dem Sterne mag ich wohl gehen, könnte es wohl sein, dass ich ginge”
“I could/would go to the Star, too”

(16) pidä läpi kaema, kas sè weel ütte lännes
must through go, q it still together go-pot-3sg
“man muss untersuchen, ob es wohl noch übereien stimmt ”
“whether it still tallies should be checked”
3. Generalisations in grammars

In sum, my data shows that in none of the spoken varieties of the Finnic languages has the potential mood achieved the same stage of epistemicity as in contemporary Standard Finnish. Still, if we look at the grammars or standard descriptions of Finnic languages, we can find definitions and examples indicating that the potential mood is used to express epistemic meanings. To some extent, these generalisations give a biased view of the character of the potential mood:

Collinder (1960):
Finnish lähtenen (go-POT-1SG) “I probably start, I dare say I shall start”

Itkonen (1966):
Finnish lukenen (read-POT-1SG) “perhaps, maybe, possibly I will read”

Laanest (1982):
Finnish antanen (give-POT-1SG) “ich dürfte geben, ich gebe wohl”
Karelian peššen (wash-POT-1SG) “ich dürfte waschen, ich wasche wohl”
Vepsian andanek (give-POT-1SG-Q) “ob ich vielleicht gebe?”
Ingrian lukkeenen (read-POT-1SG) “ich dürfte lesen, ich lese wohl”
Votian wottianen (take-POT-1SG) “ich dürfte nehmen, ich nehme wohl”
Võru dialect of Estonian saane`s (get-POT-3SG) “er dürfte bekommen”

For instance, Laanest (1982) gives an identical, clearly epistemic interpretation of all individual potential verb forms, irrespective of person, in the various Finnic languages. It is misleading that the examples of the potential mood usually involve 1st person forms and that the functions of the individual verb forms are defined without indicating any wider linguistic context. In fact, in contemporary varieties of the Finnic languages, the 1st person potential verb forms appear extremely seldom, especially in declarative sentences. Besides, the 1st person potential forms cited in studies actually never occurred in the spoken language in the epistemic function indicated by explanations such as “perhaps, maybe, possibly I will read”, “I will probably start, I dare say I shall start” or “maybe I will give”.

The descriptions found in grammars might soon lead us to infer that the Finnic potential is fairly obviously an epistemic mood. However, as I have already pointed out, my investigations show that it has a purely epistemic sense only in present-day Standard written Finnish, and that this use is a late development.

A more general point to consider here is the influence of written tradition on the development of modal categories. The analysis of the Finnic potential mood reveals that the development of literary language may influence the development and the description of a mood category considerably. As we know, cross-linguistic studies rely heavily on data drawn from standard grammars. The study of modality has
also been biased by written language to a considerable degree (as in all linguistics; see Linell 1982). We may just have to guess what kind of bias these generalisations may involve.

4. The functions of the potential mood in a diachronic perspective

The analysis of the Finnic potential showed that this mood has multiple uses whose meaning interrelates with contextual factors. Since one possibility for describing and explaining this variation is to approach the category of mood as a set of diachronically related functions, as suggested by Bybee, Perkins, and Pagliuca (1994), I employed the hypotheses suggested in cross-linguistic studies and sketched the paths of development the potential may have taken in the Finnic languages. I shall now briefly introduce my findings, which, taken together, partially support the scenario of Bybee et al., but, also present some challenges to their theory, and raise a few new questions. In this paper I must leave many aspects of the diachronic developments that I have sketched aside. It may be mentioned that the contextual factors my analysis showed were influential are person, modal sentence type (declarative vs. interrogative), position of the clause (main clause vs. subordinate clause, simple sentence vs. main clause in a complex sentence) and the additional modal elements in the sentence. I will now introduce the broad lines and restrict my discussion to the path that leads to the sense of epistemic possibility, only mentioning the paths leading to ‘subordinating’ and ‘speaker-oriented’ senses.

4.1 The semantic development of the Finnic potential mood

In brief, the semantic development of the Finnic potential mood I have outlined is illustrated in Figure 1. Its earliest modal sense in my scenario was that of the agent-oriented intention, which is best evidenced in the data from Finnish folk-poetry (see example (9) above). A sense close to intention is that of willingness, which can be traced in interrogative clauses and conditional clauses (see examples (8) and (13)). An important intermediate stage in the development was the sense of the predictive future (examples (10) and (11)) which gave rise to the root possibility sense (examples (2)–(5), (7) and (15) above). The sense of possibility, which may have developed in a variety of contexts, seems to underpin the gradual expansion of use of the mood from future contexts to the present.

The data shows that conditional contexts were crucial in the development of the possibility sense in main clauses, by which I mean the syntactic environment of an apodosis, the main clause of a conditional sentence. Let us look at the example (11) once more (repeated here as (17)).
In (17) the speaker expresses a prediction: what will follow in the future if the recipient fulfils the condition (what the speaker is afraid of). As the prediction is dependent on this condition, the sense of possibility emerges naturally from the apodosis – the fulfilment of the condition makes the proposition possible. This implied sense of possibility has been gradually conventionalised and the predictive sense has faded into the background so that the mood marker has become the marker of an apodosis. Since in discourse the apodoses can be used independently as well, the implied connection with some condition may have loosened and the general root possibility meaning gained ground. This historical development is clearly evidenced in the Finnish data on declaratives with a 3rd person potential form: in the data representing earlier stages of Finnish (folk-poetry), most of these clauses are main clauses in a conditional sentence, while in the present-day Finnish dialects these clauses are almost exclusively simple sentences.

This development resembles the development of the possibility sense of the Indo-European optative mood as suggested by Kuryłowicz in his study on the inflectional categories (1964:143–144). He sees the possibility (potentiality) sense of the optative originally as representing the use of the mood in the main clauses of a conditional sentence. Kuryłowicz emphasises the significance of the context of conditional sentences in the development of new senses of mood and tense categories. He argues as was argued above: both parts of a conditional sentence, protasis and apodosis, may also be used independently in discourse, giving rise to new functions
of the corresponding moods and tenses. (For some reason, Bybee et al. do not refer to the findings of this study at all.)

Most of the contemporary varieties of the Finnic languages are still at the stage where the potential mood expresses root possibility that contextually allows epistemic interpretation. The epistemic sense of possibility has been supported by other modal markers, especially in Finnish dialects (see example (5)). We can thus say that it was only in Standard Finnish, mainly in its formal written forms, that the development proceeded during recent centuries in such a way that the mood marker now is the only modal element in the sentence, and hence can be clearly classified as a carrier of epistemic mood (see example (1)). In interrogative sentences it is not always possible to distinguish between epistemic and non-epistemic uses, since we are at the same time concerned with the grammaticalisation of larger constructions – speculative and epistemic interrogative structures.

4.2 The paths of developments for modal meanings

Now I would like to compare my scenario to that suggested in the study by Bybee et al. (and represented in a proposal for a modality map by van der Auwera & Plungian). While the paths of development I sketched show resemblances to the suggested universal paths, there are also some differences. First of all, my findings are compatible with the suggestion that the epistemic senses develop later than and out of the agent-oriented senses; this case has already been widely discussed in the previous literature (e.g. Shepherd 1982; Traugott 1989; Gamon 1993; for a discussion of the position of the 'deontic' uses; cf. van der Auwera & Plungian 1998). Likewise, the hypotheses of Bybee et al. that speaker-oriented and epistemic meanings develop via divergent paths and that speaker-oriented meanings do not develop into epistemic meanings get further support.

One difference concerns the placement of the root possibility sense. Bybee et al. mention this sense only in connection with the path of development that runs from the sense of ability to the epistemic sense. (See Figure 2.) On the other path that leads to epistemic meaning (that is, which derives from the sense of intention), the epistemic probability sense is assumed to develop directly from the future sense.

![Figure 2](image)

*Figure 2. The path of development from ability. (Bybee et al. 1994:240.)*
Figure 3. The path of development from desire and movement toward. (Bybee et al. 1994:240.)

(See Figure 3.) Now, my data from the Finnic potential mood suggests that an epistemic meaning based on the future can also develop via the root possibility sense. This diachronic development was sketched above, in Section 4.1. Thus, what I have found suggests that the main path of development for the epistemicity of the potential mood in Finnic involves root possibility as an intermediate stage between non-epistemic and epistemic usage.

The importance of the root possibility (‘participant-external possibility’) as a source of epistemic possibility is clearly recognised in van der Auwera & Plungian’s map. However, the claims of Bybee et al. concerning the paths leading from the future preceded by intention are not represented by van der Auwera & Plungian (1998:97), although they do discuss the uses of the future in both the ‘pre-modal’ and ‘post-modal’ spheres. In sum, my findings suggest a new path leading from intention via the future to root possibility.

Another question that my scenario raises concerns the hypotheses on the diachronic relation between epistemic and subordinating senses. Bybee et al. suggest that subordinating senses may derive not only from agent-oriented and speaker-oriented senses but also from epistemic senses. This development is illustrated in Figure 4. My analysis of the meanings of the potential mood revealed that both the epistemic and subordinating senses of the mood are the last on the divergent paths of development. In other words, these senses do not fit into one and the same diachronic continuum but represent the culmination of three distinct processes. (See Figure 5.)

As Bybee et al. suggest, the sole further development for subordinate uses of modal grammatical categories is their gradual disappearance from the language. Contrary to the subjunctive-like mood categories described by Bybee et al., in the
light of my findings, the subordinating sense is not an ultimate end point in the development of the potential mood. The subordinating sense is just one use of the mood that has gradually disappeared as subordinating conjunctions and other markers of subordination have been developing. Simultaneously, the development in main clauses has proceeded towards epistemic meaning.

To sum up, the analysis of the potential mood revealed that the diachronic relations between epistemic and subordinating modality in the development of the Finnic potential mood differ significantly from the universal paths suggested for modalities. However, this does not necessarily mean that the development of the potential mood has been somehow exceptional. The results of my analysis suggest that the hypotheses of Bybee et al. concerning the subordinate uses of modal grammatical categories still call for empirical testing, especially with regard to conditional clauses (protases). In addition, the differences may partly be explained by the fact that the notion of 'epistemic possibility' seems to attract various interpretations easily.

It is to be noted that Bybee et al. base their scenario mainly on an analysis of complement clauses, whereas adverbial clauses such as conditional clauses do not receive as much attention from them. According to Bybee et al. (1994:208–209) the 'meaningless' grammatical morphemes that occur in protases are highly grammaticalised, since it has been shown that in this syntactic position the earlier modal senses of the grammatical morphemes are most resistant to change. The fact that the same grammatical morphemes usually convey a sense of epistemic possibility in main clauses has tempted the authors to conclude that the subordinating sense
may arise from the basis of an epistemic meaning. However, Bybee et al. do not explain how this could happen, their arguments only applying to the generality of the meaning and its state of reduction.

Traugott has previously (1985) made quite a similar suggestion to that of Bybee et al. concerning the direction of semantic change between the epistemic sense and the sense of subordination (epistemic modality → subordination) when discussing the grammaticalisation of markers of the protasis cross-linguistically. She suggests that one main source of markers of protases is to be found in elements expressing epistemic modality. She bases her arguments on the semantic functions of conditionals which, she claims, “clearly have to do with imaginary possible worlds”. The fact that conditionals are about conceivable possibilities, may, she suggests, motivate the use of epistemic modal categories in the choice of a marker to signal a conditional clause. However, Traugott seems to use the term 'epistemic’ as referring to a wider notion than linguists usually do (cf. Lyons 1977:797; Bybee et al. 1994:179; Gamon 1994; van der Auwera & Plungian 1998). Her only explanation of the notion of 'epistemic modality' is "the modality of possibility and doubt", (1985:290) which does not consider the speaker’s commitment critical. Using this definition makes it hard to draw a distinction between non-epistemic and epistemic possibility. The various interpretations of the term ‘epistemic’ may explain the fact that no support for Traugott’s hypothesis (epistemic modality → subordination) was found in my study. In the development of the potential mood, epistemic and subordinating senses seem to have developed along entirely divergent paths unconnected to each other.

What is important to note here, too, is the fact that Traugott sees conditionals above all as assertive utterances expressing logical factual relations. If we study conditional utterances in real discourse, the picture is different, since the analysis of the use of the Finnic potential mood in protases and apodoses revealed that conditional utterances (of the reality type) are often affective expressions of speaker’s will – commands, threats or promises. In my view, no viable hypothesis concerning the diachronic relations between epistemic modality and the modal categories used in conditional sentences can be based on the description in grammars only. An analysis of empirical data is required for clarification these connections.

In the light of my analysis, we need not only more empirical research but also more accurate definitions of the notion of ‘epistemic possibility’ and how it is distinguished from the notion of ‘root possibility’ in order to develop the theory further. This applies particularly to those utterances in which the possibility marker has scope over the entire proposition, i.e. when the modal marker reports the conditions imposed on a proposition rather than an agent. In such cases non-epistemic and epistemic meaning may overlap. In the analysis of the potential mood such uses
were classified as non-epistemic, since the epistemic meaning is still inferred: the utterances are not purely speaker’s subjective evaluations of the likelihood of the proposition.  

The importance of the general root possibility sense as a natural link in the rise of the epistemic possibility sense has already been emphasised by Gamon (1993) and recognised by van der Auwera & Plungian (1998) as well. The weakness of the distinction between non-epistemic and epistemic senses in the case of possibility has also been demonstrated by Coates (1995). As pointed out by Gamon, the general root possibility meaning has been designated variously by different scholars: e.g., Lyons (1977) calls it ‘objective epistemic’, Palmer (1986) ‘neutral dynamic’, and Traugott (1989) ‘weakly epistemic’. Such being the case, it is understandable that the results of such analyses are not always comparable.

Although the findings of the cross-linguistic studies offer useful tools for describing the modal categories and their semantic development, we should be aware of the restrictions that bear on the framework at issue. If we operate with very general semantic modal meanings, too little attention may be paid to the fact that the senses of the moods are tightly interwoven with several contextual factors. As shown above, the most common syntactic environments in which the potential mood appears (if we leave out present-day written Finnish) are interrogatives and subordinate clauses, not declaratives, in which the sense of the modal marker is much easier to analyse.

5. Conclusion

While Finnic potential mood is usually described as an epistemic mood in grammars, it has pure epistemic meaning only in present-day Standard Finnish. This development is very late, having taken place in the past few centuries in literary language. In other varieties of the Finnic languages, the potential mood has many non-epistemic meanings, the most frequent of which are general root possibility and the subordinating sense.

The semantic development I have outlined offers new evidence on the hypotheses concerning the development of modal grammatical categories and the evolution of epistemic meaning. While my findings support the suggested universal patterns, they also call for further empirical research. In my view, it is important to investigate the relations between root possibility, epistemic possibility, and the uses of the modal grammatical categories in conditional sentences in more detail.

Finally, the study of the Finnic potential mood has given us grounds to think about how the development of literary language and written tradition influence the
development and the description of modal categories. Surprisingly enough, this topic has not been touched upon in the discussion of the diachrony of modal functions. Regarding the Finnic potential mood, we have seen that the development has, indeed, been fairly different in written and spoken language.

Abbreviations

ACC = accusative case
ALL = allative case
AUX = (potential) auxiliary
CLT = clitic
CONNNEG = connegative form (used with negation)
ELA = elative case (“from”)
ESS = essive case (“as”, “in”)
GEN = genitive case
IMP = imperative mood
IND = indicative mood (unmarked)
INE = inessive case (“in”)
NEG = negative (auxiliary)
PART = partitive case
PASS = passive
PL = plural
POT = potential
PX = participle
Q = question marker
SG = singular

Notes

1. This paper is a product of a larger project entitled Regional speech patterns and the grammar of modal expressions, which is supported by the Academy of Finland (grant no. 49181).

2. The literary language of Finnish, as well as Estonian, is some 500 years old. Old Literary Finnish was largely based on western and south-western dialects and was used mainly in translations of religious texts. When the process of establishing a cultural language for all strata of society started in the 19th century, the expressions of the eastern dialects were utilised as well. (See Häkkinen 1994.)

3. Although the terminology developed by van der Auwera & Plungian (1998) would have advantages in some respects, in this paper I prefer to use the terminology of Bybee et al. (1994). One reason for this is that van der Auwera and Plungian concentrate on examining the senses in which possibility and necessity contrast, leaving out the sense of volition and the uses classified as ‘speaker-oriented’ by Bybee et al. Sketching the semantic development of a mood category (that is, an inflectional category) such as the Finnic potential suggests that the proposed distinction between modal meanings and meanings pertaining to illocutionary type is far from clear-cut (cf. van der Auwera & Plungian 1998:83).

4. The tape-recorded interviews on which the study is based amount to some 500 hours, and the total number of informants, representing all sub-groups of Finnish regional dialects, is approximately 600. The informants are rural, non-mobile people born mainly in
the 1880s–1910s; at the time of recordings they were approximately 70–80 years old. The interviews deal with topics such as everyday life in the countryside, traditions, and personal experiences, and contain a lot of narratives. The speech style which the interviews aimed at was that of spontaneous informal speech. (For details, see Virtaranta 1981.)

5. The oldest text samples from 1930s consist of fairy tales and stories transcribed on the spot by Finnish dialectologists in the late 19th century and the first decades of the 20th century. The newer material is more compatible with the Finnish data as it contains transcriptions from tape-recorded interviews that were carried out by the Finnish scholar Virtaranta in the 1950–1970s and several researchers from the Karelian Scientific Centre of Russian Academy of Sciences in the 1980s and early 1990s. The oldest informants of the Karelian corpus were born in the 1840s and the youngest in the 1920s.

6. Until the middle of the 19th century there were no varieties of spoken Finnish other than the regional dialects. The history of spoken Standard Finnish begins at the end of the 19th century, when rising nationalism induced some formerly Swedish-speaking, educated individuals to use the literary form of Finnish, which was developed by purists. The written Finnish of the 19th century was made up of elements of very different origins. It was no longer based on any dialects as such. (See Paunonen 1994.)

7. Finnish yes/no-questions are formed by attaching the clitic -ko/-kō to the first constituent of the sentence, as in (8). When the truth of the whole proposition is being questioned, the first constituent is the finite verb. (See Kangasniemi 1992:223–242.)

8. As Gamon points out (1993), epistemic modality is typically described as encoding an overt qualification of the speaker’s commitment to the truth of the utterance; thus, truly subjective epistemic uses are performative-like, indicating the speaker’s own estimation of the likelihood of a process.

References


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On degrammaticalization

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1. Grammaticalization theory

Grammaticalization is defined as the development from lexical to grammatical forms (or functional categories), and from grammatical to even more grammatical forms. Since the development of grammatical forms is shaped by constructions as well as larger context settings, the study of grammaticalization is also concerned with constructions and larger discourse units. Grammaticalization thus involves the following main stages of development (or part thereof):

\[(1) \quad L > G_1 > G_2 > G_0\]

where \(L\) = lexical form, \(G_1\) = grammatical form, \(G_2\) = more grammatical form, \(G_0\) = grammatical form which has no more grammatical meaning, and “\(>\)” = “develops diachronically into”.

In accordance with this definition, grammaticalization theory is concerned with the development of grammatical forms. Its primary goal is to describe how grammatical forms arise and develop through space and time, and to explain why they are structured the way they are. Grammaticalization theory is based on the hypothesis that the development sketched in (1) is unidirectional. Underlying grammaticalization there is a cognitive strategy whereby in specific contexts less concrete, less immediately accessible, and/or less clearly delineated meaning contents are understood and described in terms of more concrete, more readily accessible and/or more clearly delineated contents (Heine, Claudi & Hünnemeyer 1991:28); we will refer to this strategy summarily as concretization (Heine & Kuteva 2001). This strategy can be held responsible for a wide range of linguistic developments. More than four hundred developments have been identified so far (Heine & Kuteva 2002); a few general examples to be observed in many genetically and areally unrelated languages are summarized in (2).
(2) a. Temporal and aspectual contours of events (e.g. future tense) are commonly expressed in terms of expressions for verbal processes (“go to”, “come to”, “want”).

b. Grammatical meanings for spatial relations (e.g. “behind”) are not infrequently expressed in terms of concrete objects (the body part “back”).

c. Textual relations, including relations between noun phrases and clauses (e.g. definite reference, relative clause marking) tend to be expressed in terms of spatial deixis (e.g. demonstratives).

Concretization has a number of effects on grammatical change, being responsible for the following interrelated mechanisms (Heine & Kuteva 2002): With the use of an existing linguistic expression in a new context (= extension or context generalization), that expression loses in semantic properties that are irrelevant in that context (desemanticization), subsequently also in morphosyntactic properties characteristic of its use in other contexts (decategorialization), and eventually it may also lose in phonetic substance (erosion; see Heine & Kuteva 2002).

2. Degrammaticalization

In the course of the last years a number of works have appeared that in some way or other question the validity of the unidirectionality hypothesis (see especially Newmeyer 1998; Campbell 1991, 2001; Campbell & Janda 2001; Janda 2001; Norde 2001. See also Ramat 1992). Newmeyer (1998:263, 275), for example, while admitting that “unidirectionality is almost true”, argues that one counterexample is “sufficient to refute unidirectionality”. Not all students of this subject matter, however, take such an extreme position, maintaining, for example, as Traugott does:

If one is of the opinion that a single counterexample is enough to refute a linguistic universal, and that only linguistic universals can explain anything, and therefore only they are worthy of study, then there is at some level nothing to talk about.

(Traugott 2001:3)

A key notion figuring in this line of work is the term degrammaticalization, which is widely held to constitute a major challenge to grammaticalization theory; terms that have been used in a similar sense are demorphologization (Joseph & Janda 1988) and ’upgrading’ (see 2.8 below). A review of the relevant literature suggests, however, that this term is used for quite a number of different phenomena (see especially Norde 2001), some of which are hard to reconcile with one another. Table (3) presents a catalog of the most common kinds of linguistic change that have been subsumed under the label degrammaticalization. (Note that the formulas
presented in (3) are not meant to be structural descriptions; rather, they describe some properties of typical instances of what has been described as degrammaticalization.)

(3) Uses of the term degrammaticalization

a. \( G_2 \succ G_0 \) Loss of grammatical meaning
b. \( L < G_1 < G_2 \) Mirror image reversal
c. \( L < G_1 \) Lexicalization
d. \( L < G_1 \) Euphemism
e. \( G_1 < G_0 \) Exaptation
f. \( G_1 < G_2 \) Adaptation
g. \( G_1 < G_2 \) Replacement
h. \((L) < (G_1) < (G_2) \) 'Upgrading'

We will now look at each of the cases distinguished in (3) in turn.

2.1 Loss of grammatical meaning

The development sketched in (3a) is contained in (1), hence it is an instance of grammaticalization. It constitutes the final stage of grammaticalization: As a result of desemanticization, grammatical forms \((G_1, G_2)\) increasingly lose in semantic content, and in the end there is no more content to lose, that is, all semantic properties are bleached out (= \(G_0\)); (3a) thus describes the stage of grammaticalization where once meaningful forms end up as meaningless, 'empty morphs' (see Givón 1979:208–209; Heine et al. 1991:226; Ramat 1992:551ff.; Koch 1996:241; Norde 2001:236–237). A paradigm case is provided by Greenberg (1978),7 relating to the grammaticalization of demonstratives \((G_1)\) to definite articles \((G_2)\) and ultimately to semantically empty markers on nouns no longer expressing any functional contrast \((G_0)\). Note, however, that this development may be discontinued at any stage and, perhaps more often than not, grammaticalization does not reach this stage. The absolute endpoint would be reached when both the meaning and the form of a grammatical form are lost, that is, when a grammatical form disappears.

Degrammaticalization in this sense, thus, is a predictable outcome of grammaticalization, provided that the development is carried to its completion.

2.2 Mirror image reversal

The most obvious way of proving that the unidirectionality hypothesis is without empirical support would be to find examples where there is a reversed directionality, that is, where instead of (1) we find cases of (3b). In accordance with (2a), for example, in English a verb of volition “want” \((L)\), will, developed into a
future tense marker \((G_1)\) and subsequently into a marker of epistemic modality in specific contexts, e.g., *She will be at home by now* (Bybee, Pagliuca & Perkins 1991)\((G_2)\). We know of no language where the reverse process has occurred, that is, where a marker of epistemic modality has given rise to a future tense marker and subsequently to a lexical verb “want”. It would seem in fact that mirror image reversals of grammaticalization are unattested in what we know crosslinguistically about grammatical change (cf. Giacalone Ramat 1998:118). Accordingly, Norde observes:

> In other words, degrammaticalization is not the mirror image of grammaticalization in the sense that it cannot be the complete reverse of a grammaticalization cline. This would be logically impossible, since grammaticalization frequently involves semantic and phonological reduction, and while the grammaticalization into a reduced form may be predictable from the original full form, a full form is evidently not predictable from a reduced form (…). In this respect grammaticalization is similar to irreversible natural processes such as aging and erosion. (Norde 2001:236)

2.3 Lexicalization

The term lexicalization has been applied to a wide range of phenomena,\(^8\) and the present cases refer only to one particular manifestation of it which, for want of a better term, one might call ‘revalorization’. Lexicalization of this kind is an instantaneous and a ubiquitous process, it serves to assign a segment of text, irrespective of whether it is a meaningful entity or not, the status of a referential, lexical form. Such a segment could simply be a sound or a letter which is treated as a noun, e.g., *There are two e’s in my name*, it can be a grammatical form (see below), or it can be a full sentence, e.g., *This is a forget-me-not* (Traugott 2001:7).\(^9\)

As early as 1992, Ramat showed that “degrammaticalization processes may lead to new lexemes” (1992:550), and subsequent research has in fact confirmed what was actually commonplace in earlier studies of grammatical change – namely that closed-class items such as adverbs, adpositions, conjunctions, or derivational affixes may acquire the status of open-class categories such as nouns or verbs. The following collection of English examples illustrates the relevant process (for more detailed discussions, see Ramat 1992; Giacalone Ramat 1998:115; Newmeyer 1998:270; Campbell 2001:128, 146–147).\(^10\)

(4) English

a. From closed-class form to noun

- The ups and downs (< *up*, *down*, adverbs, prepositions)
- An out (in sports) (< *out*, adverb)
- the ifs and buts (< *if*, *but*, conjunctions)
b. From closed-class form to verb
   You can off (= kill) anybody you don’t like.
   (< off, adverb, preposition)
   To out someone (< out, adverb)
   To up the sale price (< up, adverb, preposition)

c. From derivational affix to noun
   I dislike the use of isms. (< -ism)
   Her ex is a monster. (< ex-)

d. From ‘quasi’-form to noun
   An ade (cf. lemonade)
   The cheese-burger (cf. hamburger)

There seems to be wide agreement that such instances of change from non-lexical to lexical status are not relevant to grammaticalization theory since they involve lexicalization rather than grammaticalization. For Norde they are suggestive of a “lexicalization of grammatical items” rather than of degrammaticalization. In a similar fashion, Traugott (2001:7, see also Hopper & Traugott 1993:127) concludes that “they are instances of recruitment of linguistic material to enrich the lexicon” and that they “are therefore not counterexamples to grammaticalization, which crucially involves enrichment of the grammatical component of language.”

2.4 Euphemism

To the extent that euphemism has figured in discussions on degrammaticalization, it relates to a process whereby forms for concepts that are socially improper in specific contexts are avoided and these concepts are referred to by means of other forms. Technically it resembles lexicalization (see 2.3) in that it involves the same structural development from grammatical (G1) to lexical forms (L). For example, referring to sexual organs such as “penis” or “vagina” in terms of spatial concepts such as “(the thing) in front”, “(the one) below” appears to be crossculturally a common strategy. The linguistic product may be that closed-class items such as locative adverbials turn into open-class entities, viz. nouns for body parts (see e.g. Heine, Claudi, & Hünnemeyer 1991:50).

A different kind of euphemism also involving degrammaticalization of the type sketched in (3d) is discussed by Burridge (1995): In Pennsylvania German, a modal auxiliary, watte “would”, developed into a lexical verb (“wish”). As Burridge shows, one factor contributing to this development can be found in the particular Mennonite religious principles held by the speakers of Pennsylvania German, who appear to have introduced this change in an attempt to avoid expressing a wish too bluntly.
While euphemism may result in a development of the kind sketched in (3d), it is not necessarily directional, that is, it need not lead to degrammaticalization. For example, sexual organs are not uncommonly referred to euphemistically by means of nouns from other semantic domains, and such cases clearly do not involve any reversal of directionality.

2.5 Exaptation

A number of examples figuring in the literature on degrammaticalization concern grammatical forms which have lost most or all of their semantic content \( (G_o) \) and are put to new uses as semantically distinctive grammatical forms \( (G_1) \), as sketched in (3e). This process is described by Greenberg (1991) as regrammaticalization and by Lass (1990: 316) as exaptation, which Lass regards as an instance of “conceptual renovation”. Common instances of exaptation concern the fate of the Indo-European affix \(-sk-\) (Greenberg 1991; Giacalone Ramat 1998; Traugott 2001), or that of some earlier Indo-European gender-case-number inflections which were later reinterpreted as new derivational suffixes. Examples are provided by the Swedish nominal inflectional suffix \(-er\) (masculine singular nominative) which gave rise, among others, to a suffix used to derive nouns from (derogatory) adjectives (Norde 2001: 245), or by the Latin neuter plural suffix \(-a\), which developed into a collective plural marker, thus giving rise to a new number category in Italian (Giacalone Ramat 1998: 113–114).

The exact status of exaptation as a strategy of grammatical change is still not well understood. First, not all cases that have been reported so far really qualify as exaptation (see e.g. Giacalone Ramat 1998: 109–110). Second, some cases that have been invoked might equally well be described in terms of strategies other than exaptation. For example, some Indo-European portmanteau suffixes expressing gender, number, and case have acquired a new function as number markers (Giacalone Ramat 1998: 116). However, rather than invoking exaptation, one might equally well regard such cases as being due to desemanticization (see Section 1), a canonical mechanism of grammaticalization whereby parts of the meaning (e.g. gender and case information) are bleached out and only one component (number) survives, even if the new number function is not exactly the same as the one prior to the process.

To conclude, assuming that exaptation is in fact a relevant conceptual strategy, it appears to be a factor that is independent of grammaticalization. First, it does not contradict grammaticalization in that, as far as the evidence available suggests, it does not lead to mirror image reversals of grammaticalization (see Section 2.2). Second, unlike grammaticalization, exaptation does not exhibit any clear directionality: It may lead both from more to less and from less to more grammatical
status (Lass 1997:318; Norde 2001:244–245). And third, while grammaticalization is a crosslinguistically regular process (see above), the occurrence of exaptation is idiosyncratic in that it does not appear to allow for crosslinguistic generalizations.

Exaptation might be viewed as a special instance of lexicalization, in that both involve the revalorization of forms that may be largely or entirely meaningless as “more meaningful” ones. There are, however, reasons to keep the two separated: First, exaptation has been described as occurring in situations of strongly grammaticalized forms as sketched in (3e), hence not involving the lexicon, while lexicalization leads from non-lexical to lexical forms (3c). Second, while lexicalization of the type discussed here is an instantaneous process (Norde 2001; Traugott 2001:7), exaptation has been described as a gradual process whereby morphological material that no longer clearly expresses grammatical distinctions gradually acquires new uses in specific contexts.  

2.6 Adaptation

In so far as it is relevant to degrammaticalization, adaptation can be described as a process whereby old taxa are adapted to new taxonomic categories; it serves in particular to adapt grammatical forms to new word classes or morphological paradigms.  

As a rule, adaptation is in accordance with grammaticalization; in fact, it forms a predictable component of it. For example, when a lexical verb is grammaticalized to an auxiliary, a body part noun to an adposition, an adposition to a marker of clause subordination, or a demonstrative to a definite article, then the grammaticalized form is likely to be adapted to the already existing classes of auxiliaries, adpositions, conjunctions and determiners, respectively (see Heine, Claudi, & Hünnehmeyer 1991:233 under ‘recategorialization’). Still, adaptation may have the effect that the grammaticalized item acquires morphosyntactic properties that are at variance with common developments to be observed in grammaticalization. For example, in many languages adverbial phrases exhibit a fairly free word order behavior within the clause, in that they can be placed before or after the verb. Now, when a lexical form such as a nominal or verbal form is grammaticalized to an adverbial form, this may mean that the relevant form is freed from the cooccurrence constraints characteristic of its lexical use, and adopts word order properties associated with the paradigm of adverbials. For example, in the West African Niger-Congo language Ewe, the verb *tsó* “come from” has been grammaticalized to an ablative preposition “from". Ewe has a fairly rigid word order which entails, for example, that verbs cannot be placed sentence-initially. In its grammaticalized form as a preposition, however, *tsó* can occur either sentence-finally or sentence-initially like other adverbial constituents (see Heine, Claudi & Hünnehmeyer 1991:234–235).
Adaptation may take place when a grammatical category declines (in accordance with (3a)) and the surviving form is adapted to other categories. The fate of the Latin neuter gender is a case in point: In the course of the development from Latin to the modern Romance languages, this gender survived in restricted contexts, e.g. in the definite article paradigm of Southern and Central Italian dialects (Giacalone Ramat 1998:113); elsewhere, however, it was lost. Adaptation had the effect that exponents of the declining neuter category were adapted to the surviving gender-case-number categories, primarily, though not exclusively, to the masculine gender paradigms.18

Adaptation does not exhibit any specific directionality, that is, it may lead to both of what Newmeyer (1998:263ff.) calls 'downgrading' and 'upgrading.' A number of cases of adaptive "upgrading" have been reported in the relevant literature (e.g. Newmeyer 1998; Campbell 2001; Norde 2001); typically they concern old forms that have lost most or all of their grammatical distinctiveness and are assigned to new, less grammatical, morphosyntactic paradigms. The cause for this may be what Bybee, Perkins and Pagliuca (1994:13) call 'strong paradigmatic pressure': In Modern Irish, the person-number agreement suffixes on the verb have been lost and replaced by obligatory subject pronouns. The first person plural suffix -muid, however, has been retained and adapted to the paradigm of independent pronouns, thus turning from an affix into a free form (Bybee, Perkins, & Pagliuca 1994:13–14).

2.7 Replacement

Replacement appears to be a basic human strategy, and in some way grammaticalization can be said to also involve replacement. However, things are slightly more complex. Grammaticalization concerns the development of a given form from one meaning to another (desemanticization) and subsequently from one morphosyntactic status to another (decategorialization), e.g. from a verb meaning "go to" (lexical item) to a future tense marker (auxiliary) (see Section 1). Thus, there is replacement, but only partial replacement. The form remains etymologically the same: The form of the lexical verb "go to" is retained, even if morphosyntactically and phonetically modified.

A number of examples in the literature on degrammaticalization concern cases where a linguistic form, instead of assuming a new meaning (subsequently also a new morphosyntactic status), is replaced by some other form. Obviously, such cases cannot possibly be suggestive of grammaticalization or, if they contradict the unidirectionality hypothesis, of degrammaticalization. Still, such cases of replacement have been presented as cases of degrammaticalization.
A paradigm case of this kind can be seen in the first person plural verb suffix -mos of Regional Spanish, which is said to have been “reanalyzed as 1.pl. subject-clitic (or bound-root) = nos” (Janda 2001:270–271, 287; see also Janda 1995:126–127; Newmeyer 1998:267–268). One may wonder whether indeed we are dealing with a legitimate case of degrammaticalization, more precisely with a ‘reanalysis’ of an inflectional affix as a clitic. What appears to have happened in this case is that, under specific phonological conditions, the affix -mos was replaced “by the independently existing clitic -nos” (Newmeyer 1998:267–268). Thus, instead of “reanalysis” we appear to be dealing with a case of replacement of one form by another.

While not being an instance of degrammaticalization, the fate of the suffix -mos of Regional Spanish nevertheless behaves as grammaticalization theory would predict it: In the final stage of their development (see Section 1), affixes lose both their meaning and their form, that is, they disappear (or are replaced by other forms), and the latter appears to have happened with -mos, which disappeared (being replaced by -nos).

2.8 ‘Upgrading’

Degrammaticalization has been referred to summarily as ‘upgrading’ (Newmeyer 1998:263ff.), involving grammatical items (G_2) assuming a less grammatical (G_1) status, e.g. affixes turning into clitics or particles, less typically also leading from grammatical (G_1) to lexical status (L) (see also Lehmann 1982:19–20; Campbell 2001:125; Norde 2001:237). Most cases of ‘upgrading’ that have been studied in some detail turn out to be instances of lexicalization (see 2.3), exaptation (2.5), adaptation (2.6), or replacement (2.7), others are controversial or of doubtful status (see e.g. Haspelmath 1999, Traugott 2001). A typical case of doubtful ‘upgrading’ concerns the development of the Germanic genitive case marker -s from a suffix to a clitic in English and Mainland Scandinavian (see e.g. Janda 1980; Harris & Campbell 1998; Newmeyer 1998:266; Norde 2001). Reviewing the relevant discussion, Traugott (2001:6) maintains that this is not an instance of degrammaticalization (i.e. reversal of grammaticalization); rather, that it is suggestive of a generalization across types of noun phrases, not uncommonly found in grammaticalization. With regard to the English ‘s-genitive, Traugott concludes that “there are so many different analyses and counter-examples that I think we can only say the jury is still out on this one” (Traugott 2001:6). Some other cases of ‘upgrading’ are based on a doubtful analysis of the data concerned, or else on a questionable analysis of what grammaticalization is about (see 2.7).

To conclude, in spite of the wide range of examples that have been adduced as instances of ‘upgrading’, more research is required to establish whether indeed this
is a relevant notion, or whether ‘upgrading’ cannot be described more profitably with reference to processes such as the ones discussed in 2.3 through 2.7, or else, to grammaticalization (see Traugott 2001).

2.9 Discussion

One major problem with ‘degrammaticalization’ can be seen in the fact that it has been used both for ‘upgrading’ and ‘downgrading’. Interestingly, the same applies also to the term demorphologization, that has also figured in discussions of grammatical change: It refers on the one hand to cases of ‘upgrading’, whereby e.g. affixes are ‘syntactized’ to clitics; on the other hand it refers to a phenomenon whereby a morphologically distinct item is phonologized, hence to instances of ‘downgrading’ in accordance with (3a). In much the same way as it happened with degrammaticalization, the term demorphologization has received different applications. While Joseph and Janda (1988) refer to both kinds of development as demorphologization, Hopper (1990) restricts it to the latter application, that is, to cases where “a morpheme loses its grammatical-semantic contribution to a word but retains some remnant of its original form, and thus becomes an indistinguishable part of a word’s phonological construction.”

As the discussion in the preceding section has shown, there are a number of processes that are not within the scope of grammaticalization theory and, hence, have to be described in their own right: lexicalization, euphemism, exaptation, adaptation, and replacement. Note that these processes are not mutually exclusive; not uncommonly, more than one process is at work in a given case of what has been described as degrammaticalization.

These processes, which may lead to degrammaticalization, differ fundamentally from grammaticalization, in particular with regard to the following characteristics:

a. Grammaticalization is a recurrent development, in that a given form may be, and not infrequently is, grammaticalized more than once. For example, the English will-future underwent a development from lexical item to tense marker and subsequently also to a marker of epistemic modality (see 2.2 above). While it is theoretically possible that a given linguistic form will undergo degrammaticalization more than once, we are not aware of any case where this has actually happened.

b. Whereas grammaticalization is based on mechanisms that are the same across languages (see Section 1), these processes are not. Thus, mechanisms such as desemanticization and decategorialization have been found to be at work in language after language across the world, while there do not appear to be
any corresponding mechanisms associated with the processes discussed in 2.3 through 2.7.

Still, there are a few cases to suggest that crosslinguistic regularity is not entirely confined to grammaticalization. One case concerns lexicalization, involving suffixes or quasi-suffixes used for decimal entities, which have been lexicalized in some way or other in a number of European languages, cf. English the teens “people aged between thirteen and nineteen” (< -teen), or quasi-suffixes to mark tens in Dutch tig (< -tig), German zig (< -zig) “lots of”, and Italian anta (< -anta) “age from forty upwards” (see Giacalone Ramat 1998:115, Newmeyer 1998:270). Similarly, the suffix -ism, or some equivalent form of it, has acquired nominal uses in a number of European languages, such as English, Finnish, Estonian, German, and Italian, being detached from its stem and lexicalized as an independent word meaning “doctrine, theory” (see Newmeyer 1998:269 for more examples).

A second case concerns euphemism. As we observed in Section 2.4, expressing private parts in terms of spatial concepts (“below”, “in front”) appears to be a crossculturally common strategy which in some cases has led to a change from closed-class items such as locative adverbials to nouns. All these cases, however, appear to be confined to specific semantic domains.

c. Grammaticalization is also regular across morphosyntactic classes. For example, the grammaticalization of body part nouns (e.g. back) has given rise to adverbs (He is back) or adpositions (in back of) in many languages, in some languages also to case inflections or markers of clause subordination; thus, in Ewe (ta “head”) and some Mixtecan languages of Mexico (sàà “foot”; Hollenbach 1995), body part nouns have given rise to subordinating conjunctions.

d. Grammaticalization frequently entails remarkable syntactic restructuring, while the processes described under the rubric of degrammaticalization concern essentially only cases where a given form acquires a new semantic and/or morphosyntactic status or, in the case of replacement (2.7), an exchange of one form for another. For example, the grammaticalization from lexical verbs to auxiliaries may lead to a syntactic change from a structure [verb + complement] to [auxiliary + main verb], or the development from nouns to adpositions to a syntactic change from a structure [head noun + dependent noun] to a new structure [adposition + noun] (see e.g. Heine & Reh 1984). There is nothing comparable in the development of the processes associated with degrammaticalization.

Accordingly, these processes differ from grammaticalization in the following more general features:

e. They are essentially morphological in nature, that is, they do not affect the syntax of the language concerned.
f. They are idiosyncratic; Giacalone Ramat (1998:118) therefore observes that they “represent local changes effected under marked contextual or sociolinguistic conditions […]”.

g. They are rare in their occurrence. For example, that the unidirectionality hypothesis is essentially correct has been demonstrated abundantly in the relevant literature (e.g. Heine, Claudi & Hünnemeyer 1991; Hopper & Traugott 1993; Bybee, Perkins, & Pagliuca 1994; Heine & Kuteva 2002), but it is also argued for essentially by scholars who have come up with opposing views. Harris and Campbell (1995:338), for example, maintain that “[…] there is a strong tendency for grammaticalization to proceed in one direction, though it is not strictly unidirectional”, and Joseph and Janda (1988:198–200) observe that cases of demorphologization, a process that might contradict the unidirectionality principle, are rare and not seldom controversial. While we still lack reliable statistics that would allow us to determine what “rare” actually means, two authors have come up with more specific estimates on the relative frequency of grammaticalization vis-à-vis other processes. One of them is Haspelmath (1999:1046), who observes: “I think it is a fair guess to say that 99% of all shifts along the lexical/functional continuum are grammaticalizations […].” A less generous estimate is volunteered by Newmeyer (1998:275–276, 278), who observes that cases that conform to the unidirectionality principle (= ‘downgradings’) “have occurred at least ten times as often as upgradings […].” Whoever of these two scholars is right, on the basis of such estimates one may assume that at least 90 per cent of all instances of grammatical change are due to grammaticalization, hence are unidirectional; accordingly, all other processes, including the ones that have been discussed in this paper, account at best for one tenth of grammatical changes.

h. This confirms what several scholars have claimed, namely that grammaticalization constitutes a significant constraint on possible language change (Giacalone Ramat 1998:123; Haspelmath 1999:1044). Such constraints do not appear to exist in the case of the other processes discussed here.

i. Finally, and perhaps most importantly, grammaticalization is directional, while neither lexicalization nor euphemism, exaptation, adaptation, or replacement exhibit any clear-cut directional behavior.

3. Conclusions

As we observed in Section 2, the term degrammaticalization has been used in a number of different ways. This is, of course, nothing unusual in academic discourse; but since some uses contradict each other with reference to directional-
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ity (cf. (3a) vs. (3c) or (3e)), the term is likely to give rise to misunderstandings. There is another reason why the use of this term raises more problems than it solves: Whereas ‘grammaticalization’ refers to a process that is crosslinguistically common and regular, and can be described in a principled way (see Section 1), this does not apply to the phenomena subsumed under the label degrammaticalization. Furthermore, even if one were to restrict the use of the term to one its many uses, there remains the following problem: The term suggests directionality, e.g. from more grammatical to less grammatical forms. However, as we saw above, none of the processes underlying degrammaticalization, be it lexicalization, euphemism, exaptation, or adaptation, clearly exhibits any directionality. Furthermore, with the exception of lexicalization and exaptation, which appear to be conceptually related (see 2.5), these processes do not seem to share any common denominator. Thus, it would seem that this term is not of much help for describing or understanding grammatical change, except for referring to the epiphenomenal effect some of the processes have in specific situations.

To conclude, while grammaticalization constitutes but one of the processes shaping grammatical change, it accounts for most of what happens in the development of grammatical forms and constructions. And since grammaticalization is unidirectional, grammaticalization theory offers a powerful tool for linguistic reconstruction.

Notes

1. I am grateful to Elizabeth Traugott for valuable comments on an earlier version of this paper. Furthermore, I wish to thank Tania Kuteva, Anette Rosenbach and other colleagues of the English Department of the University of Düsseldorf for an inspiring exchange of views on problems of degrammaticalization.

2. See Heine, Claudi and Hünnemeyer (1991:156ff.) on the notions "more grammatical" and “less grammatical”.

3. A slightly different definition is proposed by Hopper and Traugott (1993:xv). For a fairly comprehensive list of definitions that have been proposed for grammaticalization, see Campbell & Janda (2001).

4. Newmeyer (1998:240) raises doubts as to whether we are really dealing with a theory, and Traugott (2001:1) calls grammaticalization “a hypothesis about a robust tendency”. Note further that Newmeyer (1998) and Traugott (2001) maintain that grammaticalization is not a “distinct process”, or a “distinct phenomenon”. We agree with Traugott (2001:1) that grammaticalization can be viewed as “a subset of crosslinguistically recurring changes, that involve correlations across time between semantic, morphosyntactic (and sometimes also) phonological changes.” However, to the extent that grammaticalization theory offers an explanatory account of such correlations in general and of (1) in particular, we argue that it is
a theory concerned with a clearly defined phenomenon that can be called a distinct process (see Heine & Kuteva 2001, 2002).

5. Accordingly, Haspelmath (1999:1044) remarks: “The irreversibility of grammaticalization is one of the most important constraints on possible language changes […].” The unidirectionality principle was proposed independently by a number of different authors; as early as 1980, Vincent (1980:58) noted: “Chains of grammaticalisation are unidirectional or unilateral – i.e., put at its most general, lexical items may be grammaticalized, but grammatical items do not become lexicalized.”

6. Concerning a detailed treatment of concretization as a cognitive force, see Arieti (1976). Concretization as a linguistic strategy can be paraphrased roughly in the following way: Use the context available to describe things that are hard to understand by means of expressions for things that are easier to understand (Heine & Kuteva 2001a). Concretization is confined neither to grammaticalization nor to linguistic communication (cf. Newmeyer 1998:252–253); nevertheless, to the extent that it is responsible, and hence accounts, for grammaticalization it constitutes an integral part of grammaticalization theory.

7. Norde (2001:237) cites English forget as an example, where the erstwhile derivational prefix for- lost its grammatical status and is no longer felt to be a separate morphological unit. One might argue that this case can equally well be treated as an instance of lexicalization, in that the merger of for- and get gives rise to a new lexical form (see also Ramat 1992:552). But she also discusses another kind of grammatical change which clearly is an instance of a development in accordance with (3a), involving what she calls deflexion, that is, the loss of an inflectional category (Norde 2001:240).

8. As a rule, lexicalization can be clearly distinguished from grammaticalization, and vice versa; still, the boundary between the two is largely unclear and more research is required on this issue (see Wischer 2000).

9. In the literature on this subject there are some examples that we would like to exclude from the present discussion since they involve additional morphological material to achieve revalorization. Thus, the lexicalization of the French and German second person singular pronouns tu and du as tutoyer and duzen, respectively, involves the use of a derivational suffix and, hence, needs to be separated from the process we are concerned with here. Much the same applies to some examples discussed by Newmeyer (1998:273–274).

10. The following is an example from the Bizkaian dialect of Basque: -(t)asun ‘-ness’, a noun-forming suffix has given rise to a noun tasun ‘quality’ (For more examples of this kind, see Trask 1997; cited from Newmeyer 1998:270).

11. For a wealth of examples, see Allan & Burridge (1991).

12. In the wording of Norde, “[…] a grammatical distinction is lost prior to the loss of the morphological material that [is] used to code it,” and that material is re-used for a new grammatical function (Norde 2001:244).

13. Lass (1997:316) uses “exaptation” both for material serving some other purpose (than the preceding one) and for material serving no purpose at all.

14. Greenberg (1991:303) cites German umlauting as an instance of a process whereby phonological items are interpreted as having grammatical significance, hence as being suggestive of regrammaticalization (or exaptation). As long as these phonological items are still
associated with their earlier grammatical functions, however, one might hesitate to invoke exaptation in such cases.

15. For example, according to Norde (2001:253), the exaptation of the Swedish genitive -s was motivated by the loss of concordial case and supported by the emergence of a fixed prepositional position of determiners.

16. What Bybee et al. (1994:13) refer to as “strong paradigmatic pressure” is presumably a source of adaptation.

17. Except when used in singular imperative sentences.

18. But there is at least one instance where one could well argue that exaptation was involved: In Italian, the erstwhile neuter plural suffix -a developed into a collective plural marker, thus giving rise to a new number category (Giacalone Ramat 1998:113–114).

19. Concerning the notion generalization, see Bybee, Perkins, & Pagliuca (1994).

20. Examples of the former are provided by the Ancient Greek prefix e- (with its variants) and by the Indo-European adverbial (locative) suffix *-r, which became part of the quotative particle -war (before vowels) in Hittite; examples of “upgrading” are the English genitive suffix -(e)s and the Saame (Lappish) abessive morpheme taga (Joseph & Janda 1988).

21. There is no information in the reference on who “et al.” stands for.

References


On degrammaticalization

Process inhibition in historical phonology

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1. Introduction

The ‘exceptions’ to attested sound changes have long played a role in historical phonology. It is well recognised, for example, that Verner’s (1875) seminal study of a certain exception to Grimm’s Law was of substantial importance in the development of historical phonology as a discipline. In this paper I argue that the careful consideration of phonologically-based exceptions, at least in certain types of change, can still throw up new insights as regards what is possible in the patterning of phonological processes and their historical innovation. I also show that there is a connection between these patterns of process innovation and the structure of phonological segments. I argue that the study of such exceptions (that is, of those environments where the innovation of a phonological process has been inhibited) should be more systematic and central than it is in much of contemporary historical phonology. To show why, I discuss a novel way of understanding certain patterns of process inhibition in a well-known type of phonological change, which only becomes investigable once this kind of focus is adopted.

The paper is structured as follows: Section 1 sets out some key concepts and assumptions which will inform the later discussion of the empirical basis of the paper. In Section 2, the focus is directed towards the study of exceptions (or ‘process inhibition’ as it will be labelled); the notions developed here are applied, in Section 3, in the investigation of the patterns of inhibition which can be recognised in certain attested phonological changes. In Section 4, generalisations are drawn from this study and a move towards explanation is taken, as I propose a framework through which we can understand the patterns recognised in the types of inhibition discussed. (This makes crucial use of some of the concepts which are introduced in Section 1). Section 5 considers whether the type of ‘explanation’ proposed in Section 4 extends insightfully to other types of data, and Section 6 concludes.
Three main sets of data are discussed in this paper, in Sections 3, 4 and 5. The phonological phenomena involved are intentionally of a similar nature, but we can be quite sure that they were innovated independently, given the considerable chronological and geographical distance between the events. In any case, as will also become apparent in Section 5, the similarity among all the data sets is not immediately obvious and only becomes clear when viewed through the theoretical spectacles which are developed in this paper.

The data is discussed under three headings: the 'High German Consonant Shift', 'Lenition in Liverpool English' and 'the English r Change.' Some of the data is 'classic' material which has been well discussed elsewhere, but one of the sets – the data from Liverpool English – is largely unknown. Due to constraints of space, philological evidence is only provided in this latter case, given that it is abundantly available elsewhere for the other phenomena, in the sources indicated below. The same constraints also mean that the discussion of the data is quite brief, and they further preclude discussion of other accounts of the phonological phenomena which I address (such discussion can be found in the references provided, especially in Honeybone 2002).

1.1 Preliminary assumptions

In the course of this paper, several theoretical and analytical notions will be addressed and will help inform the discussion. I argue overtly for a particular position on some of the issues involved; at other times, I simply assume certain aspects of analysis as a basic framework for investigation. The notions in question are: (i) that there is a set of non-combinatory phonological processes, which are often described as affecting the 'strength' of segments, (e.g. consonantal 'lenition' processes), (ii) that geminate consonants often behave unlike their singleton counterparts in the innovation of phonological processes (this is often referred to as 'geminate inalterability'), (iii) that one important type of phonological change is the innovation of synchronic phonological processes (and that the innovation of these processes may be inhibited or promoted by a range of phonological factors), and (iv) that the phonological segments affected by such processes have a melodic structure, and can thus be decomposed into phonological 'features' or 'elements', which may be privative in nature.

I address the notions of inherent phonological strength and lenition in Section 2. In Section 4, I give a novel explanation for some of the facts which have previously been discussed under the heading of 'geminate inalterability'. I show there how the approach that I adopt can be extended to account for much more than the exceptional behaviour of geminates; so the term 'geminate inalterability' becomes
inappropriate as a description for the general phenomenon involved. Because these points are dealt with further below, I do not expand on them here.

In terms of point (iii), all that need be said is that: (a) at least certain types of phonological change are best viewed as the introduction of synchronic phonological processes (and, given what we know about sociolinguistic variation, it is likely that these processes will be variable processes at first), and that: (b) such phonological processes affect underlying ('input') segments and derive surface ('output') segments; for the purposes of this paper, it is not important how one is derived from the other, whether this be through phonological rules or through the selection of one output which best corresponds to the input according to a language-specific ranking of constraints. In the terminology of, for example, Ewen & van der Hulst (2001), this paper does not engage with theories of phonological rules, derivations or levels; it does, however, engage with theories of phonological representations.

In terms of such representations, i.e. point (iv), I assume that phonological segments are made up of monovalent autosegmental units. These are often referred to as 'features', but I refer to them below as 'elements', following a tradition which has grown up in Government Phonology and Dependency Phonology (see Anderson & Ewen 1987; Kaye, Lowenstamm, & Vegnaud 1985; Harris 1990, 1994; Ewen & van der Hulst 2001). This tradition also shares ideas with many theories of feature geometry (e.g. Sagey 1986; see Honeybone 2002 for further discussion).

Key features of this approach are that all elements are privative, and that segments can consist of just one element or can be built up from more than one such element. Furthermore, in principle, the same elements can appear in the representation of both consonants and vowels. The technical details in the description of elements differ somewhat in the various subtraditions within the general approach, but one important area of agreement is that common vowels such as /i, a, u/ contain one key signature element each. I label these elements respectively [palatality], [openness] and [labiality]. Less frequent vowels are comprised of combinations of these elements, thus /e/ consists of [palatality] and [openness], and /y/ (the front rounded vowel sometimes transcribed as /ü/) consists of [palatality] and [labiality].

Further elements are required for consonants, as shown in the relatively self-explanatory representations in (1). These also include root nodes (shown by •) and a level of quasi-moraic timing slots (shown by x) which allow relatively uncontroversially for the insightful representation of geminates and affricates.
Representations like those in (1) include the elements that will suffice for the segments considered in this paper, although the literature contains a good deal of debate as to what is the correct inventory of elements. The only element which may require some elucidation is |spread|; this is equivalent to [spread glottis] in more standard featural approaches (such as Iverson & Salmons 1995, for example) and to the element H in standard Government Phonology (as in Harris 1994). While some of these ideas are controversial, they are the working assumptions of phonological theory which I adopt.

2. Phonological processes and their inhibition

Given the assumptions set out in Section 1.1, it is normal to recognise that phonological processes derive surface segments from underlying segments. It is also typically recognised that phonological processes can be restricted – they typically do not affect every occurrence of a particular underlying segment, but rather only those occurrences of a segment in particular phonological environments.

In diachronic phonology, the focus of attention is naturally directed towards the innovation of such processes. Here too, however, we can choose to focus on the nature of the process involved or on its phonological environment. I describe this as a distinction between a focus on the ‘process’ proper and a focus on its ‘environment’, and it can be likened to the distinction between structural change and structural description in the terminology of standard generative phonology.

In what follows, after a brief discussion of the key types of processes which feature in the data to be discussed, I focus on their environments; specifically, I concentrate on the environments where processes were not innovated or were restricted in the extent of their innovation. There are other phonological traditions
and contemporary models which also adopt this approach, but it is not the way that things are typically done, at least in synchronic phonology. Some recent work has moved to focus equally on where processes do occur and where they do not, and this is briefly discussed in Section 2.3, along with a justification for the principal focus which is maintained in this paper. This focus can be summed up in the question: why weren't all occurrences of a segment affected when a particular process was innovated?

2.1 Historical phonology and synchronic phonology

It was noted in Section 1.1 that at least certain types of phonological change can be seen as the innovation of a synchronic process into the phonology of a language. Once innovated into a language two things can happen to a process: (i) it can remain as part of the language's phonology as an 'active' synchronic process, or (ii) it can be lexicalised into the underlying representations of a language. When (ii) occurs, importantly, the phonological environment in which the previously synchronic process occurred is fossilised thanks to the 'exceptions' to the segmental change; these exceptions show in which environments the synchronic process did not occur. Thanks to the evidence provided by these fossilised exceptions to changes we can compare synchronic and diachronic phonological events as essentially the 'same kind of thing'.

One example of a synchronic process (in Modern Persian) is discussed in Hayes (1986). Hayes claims that /v/ surfaces as [w] in a synchronic phonological process ('v-Weakening') under certain circumstances: "roughly speaking, [w] occurs when it follows a short vowel and is not syllable-initial" (1986:231). He formalises it as a rule of the type /v/ → [w], with a structural description which places /v/ in a coda following a short vowel. An important part of Hayes' paper, however, focuses on the fact that the 'rule' formulation does not show all the cases where the process is inhibited. Forms such as [morovvæt] 'generosity' have [v], not [w], even though the 'first' underlying /v/ is syllable-final and follows a short vowel. This is, Hayes claims, a case of 'geminate inalterability', a notion which we return to below, as promised in Section 1.1, although this particular process will not be the focus of investigation.

The key data in this paper are somewhat more complicated than the case of v-Weakening, and are thus potentially more interesting. They will provide us with a some clear generalisations about common patterns in exceptions (or 'process inhibition') and are particularly suitable for this purpose as they are all examples of the kinds of processes which can have clear exceptions, i.e. they are unconditioned processes (in other words, they are non-combinatory). The first two key
processes discussed here have both been described at one time or another as cases of consonantal lenition.

2.2 What is lenition?

There is a large literature on the topic of lenition, for example, Lass & Anderson (1975), Anderson & Ewen (1987), Bauer (1988), Harris (1990, 1994), Elmedlaoui (1993), Kirchner (1998), Ségal & Scheer (1999), Holsinger (2000), Honeybone (2001, 2002). The notion has an undeniable, if somewhat uncertain place in the discourse of both synchronic and diachronic phonology. In the body of work on lenition, the term is typically used to group together a number of segmental processes which are usually thought to involve phonological ‘weakening’.

To the extent that these processes can be grouped together as weakenings, the implication is that there are relationships between the types of phonological segments which can be characterised in terms of their relative (segmental) strength. One frequently cited definition of segmental strength (in terms of its opposite, ‘weakness’) is Vennemann’s personal communication to Hyman (1975:169): “a segment X is said to be weaker than a segment Y if Y goes through an X stage on its way to zero.” In the lenition literature, ‘strength’ has also been tied in with several other phonological concepts. Some possible correlates of strength are sonority, openness or the degree of resistance in the vocal tract, perceptual salience, syllable sequencing and segmental complexity. Constraints of space preclude a detailed engagement with this notion of inherent phonological strength here, and it is important in this paper only to the extent that it is often implicated in the construction of segmental strength hierarchies, which double as over-arching lenition ‘trajectories’ or ‘scales.’ These are intended to indicate what is considered to count as lenition, in that ‘stronger’ segments lenite along the trajectory to become ‘weaker’ segments. On such trajectories, the logical conclusion of lenition is typically taken to be elision. It should perhaps be noted here that I introduce, in Section 4, a separate notion of ‘positional strength’ which is not connected with this idea of inherent strength.

It will be clear that this approach defines lenition in terms of the segmental processes involved, rather than in terms of its environment. In keeping with the comments at the start of Section 2, I do not focus here on the actual processes involved nor on what causes them. I simply describe them here and then proceed to consider their interaction with phonological environment. A lenition trajectory (in part distilled from Lass 1984) is given in (2). This shows lenition as a series of stages, where any progression along the scale counts as a case of lenition. The segments involved are exemplified at the velar place of articulation.
Process inhibition in historical phonology

As mentioned above, the focus here is not placed on the ‘cause’ of lenition, but rather on its patterning. The initiating impulses which leads to the innovation of these processes have been debated at some length in the lenition literature, with many arguing that the roots of the processes lie in sub-phonemic phonetic variation, and others that more abstract phonological principles are at work. In this paper, these points must be put aside, due to constraints of space (but see Honeybone 2002 for a discussion which assumes a mix of these two types of account).

Effects of and on the place of articulation of a segment are not typically considered to be relevant to lenition (apart perhaps from debuccalisation to [h], which can be seen as the loss of place, as in, for example Harris 1990). As will become apparent in the next and subsequent sections, lenition processes are inhibited in similar ways, although each lenition can have some individual characteristics.

2.3 Lenition inhibition

At several points already in this paper, attention has been drawn to the coming focus on the patterns that can be observed in the inhibition of phonological processes when they are innovated into a linguistic system. There are, however, in principle two ways of viewing the interaction between phonological processes and phonological environments: it might be that processes are favoured in certain characteristic promoting environments (a focus on this might be described as the study of ‘process promotion’) or it might be that processes are characteristically disfavoured in particular environments (this is the study of ‘process inhibition’).

It will be clear that these are two sides to the same coin, and if one set of environments can be adequately described for a particular process, the other does not need to be defined. Much previous work focuses on the study of process promotion; for example, work on lenition often deals with the idea of lenition promotion, and seeks to describe ‘lenition environments’ or ‘weakening environments’ (for example in Bauer 1988) or ‘preferred weakening environments’.

However, things can be seen the other way around. It seems to be unavoidably the case that one absolute linguistic universal is that linguistic systems change over time; in terms of phonology, this means that new processes are introduced. It is thus arguably surprising, once a process is introduced, that it does not occur across the board.

Lenition processes are indeed common. They are arguably simply some of the ways in which segments can change spontaneously in historical phonology. If such
processes are so common as to be also almost expected, then the interesting type of phonological environment becomes those which inhibit these processes. This is the study of process inhibition. It opens up a prospectively fruitful perspective – the consideration of which prosodic and melodic factors prevent the onset of a process. Once a full description of these environments is given, then the notion 'promoting environment' does not need to be defined.

This basic idea, which is the approach to be developed here, is not intended to exclude the possibility that certain processes are best described in terms of their promoting environments (some clearly are best described in this way, assimilations, for example). Some recent work (for example, Macken & Salmons 1997 and Holsinger 2000, building on such work as Vennemann 1988) develops a position, which is largely compatible with that discussed here, which integrates both promoting and inhibiting environments into one picture (in this work, these environments are captured by metrical templates, which find an echo here in the environmental discussion in Section 2.3.1). While certain processes are best described in terms of their promotion, I argue here, however, that the key types of processes discussed are best understood in connection with their inhibition.4

2.3.1 Inhibition and 'phonological environments'
If processes are inhibited in particular phonological environments, then it becomes important to consider which kind of environmental factors might be relevant. As is well known, the notion 'phonological environment' varies along a number of parameters; potentially relevant here are both prosodic (or 'suprasegmental') factors and melodic (or 'segmental') factors. In what follows, I consider factors of both these types in connection with their ability to inhibit lenition processes. I include as prosodic factors the relationship of a segment to (i) to syllable boundaries, (ii) to word boundaries, and (iii) to stressed vowels. As melodic factors, I include the nature (in terms of place, manner etc.) of the segment(s) which (i) precede the segment in question, and (ii) follow the segment in question.

It will be helpful to recognise the environments given in (3), which are partly constructed following Ségéral & Scheer (1999). These environments are not intended to be exhaustive and it is recognised that some overlap with each other, but they represent a useful initial simplification. The environments are glossed in (3), although different theories of phonology will formalise them differently.
Many of these environments are quite straightforward: \(a, c1, c2\) and \(e\) are characterised by prosodic concerns, and \(b\) and \(d\) are those where melodic effects might be expected to play a role. In fact, it is chiefly environment \(d\) which will be considered in this connection. The recognition of prosodic factors, especially those above the level of the syllable, as in the \(c\) environments, echoes some of the crucial points made in Macken & Salmons (1997) and Holsinger (2000), who show that this type of environmental factor can play an important role in historical phonology.

3. Case studies: lenitions and their inhibition

In this section, I describe two sets of processes of the type discussed in Section 2.2 in some detail. Constraints of space will prevent the consideration of further examples (although Section 5 considers some additional relevant data). One of the sets of data discussed in this section is well-known and has been considered many times before. I try here to propose a novel perspective on the data. The other set of data is less well-known but is remarkably similar in some ways to the first data set discussed, and I propose a similar interpretation.

3.1 The High German Consonant Shift

One of the best known features of the historical phonology of High German dialects is the process which affected the spread stops of Germanic (which I represent here as /p, t, k/) to derive affricates and fricatives (see, for example, Braune 1891; Keller 1978; Vennemann 1984, 1994; Davis, Iverson, & Salmons 1999). I refer to this as the High German Consonant Shift (or 'HGCS'). Contemporary surviving traditional dialects show a difference in the extent to which they exhibit the segmental changes which were the result of the lexicalisation of the HGCS phonological processes. This is discussed below, in Section 3.1.2.5.

The basic segmental processes involved are given in (4), some of which is somewhat controversial. In line with the comments in Section 2, I do not discuss the segmental processes involved here; rather, I focus on their inhibition.
Philological evidence for the processes can be found in, for example, Braune (1891) and Paul (1916). The formulation in (4) views the HGCS as a series of ‘stages’, following an established tradition. Also, the High German reflexes given are from those regions where the orthographic evidence indicates that the processes were innovated at their most extreme. In fact, the precise details of the inhibition of these processes vary according to dialect. I discuss this briefly in Section 3.1.2. In doing this, I assume a ‘conservative’ position, widely accepted in the literature (but argued against by, for example, Vennemann 1994) that the process originated in the South of the High German speech community where it was at its most extreme.

In terms of the environments set out in (3), the main patterns of inhibition in the HGCS can be summarised as follows for the varieties of German which formed the basis of the current standard variety: there was either a relatively uninhibited lenition to fricatives, with the segments going two stages down the trajectory in (2), or there was some inhibition, where the segment went only one stage down the trajectory to affricates, or there was total inhibition, where no lenition occurred.

Prosodic and melodic factors determined to what extent the segments proceeded along the trajectory, as given in (2). Lenition of /p, t, k/ to ‘stage two’ fricatives occurred in environments \(a [\_\#]\) and \(c [v\_v]\). It was somewhat inhibited, giving a lenition of /p, t, k/ to ‘stage one’ affricates, in environment \(e [\#\_\_]\) and in environment \(d [c\_\_]\), where the preceding consonant was /l, m, n, r/ or the first half of a geminate. Lenition was entirely inhibited in special cases of environment \(d [c\_\_]\): for /p, t, k/, this can be seen in the environment \([s\_\_]\), and for /t/, it also involved the environments \([f\_\_]\) and \([h\_\_]\), and a special case of \(b [\_\_r]\).

3.1.1 The HGCS in non-standard dialects

The above discussion of the inhibitory environments is not equally applicable to all varieties of German. In some of the environments from (3), the processes were inhibited quite differently in the various dialects of High German. This can be seen most clearly in environment \(d [c\_\_]\).

Keller (1978) provides a perceptive summary. He recognises three key HGCS ‘contexts’: stops in context 1 are in the environments which were identified as completely inhibitory in the last section; this context inhibits the processes in all dialects. Context 3 is defined as “medially and finally after vowels” (Keller 1978:169); lenition to stage two fricatives occurred in “all Upper German and central German dialects in context 3” (1978:171). Context 2 is “initially, after liquids, and nasals,
... in gemination” (1978:169), and it is here that the greatest differences can be found. Keller presents the inhibitory effects of various environments in the various dialects in tabular form, reproduced below as (5).

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<td>starch -rlx &gt; rch</td>
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<td>malche -lkx &gt; lch</td>
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<td>Chind kx &gt; ch-</td>
<td>-k(h)-</td>
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<tr>
<td>teiche -pkx &gt; (n)ch</td>
<td>-rk</td>
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The differences among the patterns shown here in the various High German dialects show that we cannot hope for an exhaustive and completely predictive theory of inhibition. As I will argue in Section 4 (and thus do not discuss it here), however, there are certain clear generalisations which crop up consistently, both in terms of the innovation of the HGCS in the various dialects shown here in (5), and also in other cases of lenition from other languages. I turn now to one such case.

3.2 Lenition in Liverpool English

The variety of English spoken in Liverpool, England, is quite well known within the British Isles, but is not so well recognised outside of Britain. The variety is notable for several reasons, but has not been subject to a great deal of investigation (some of the few exceptions to this are Knowles 1974; Sangster 2001; Honeybone 2001).
Some of the most salient characteristics of the variety are its patterns of plosive lenition. It seems likely that these were innovated into the variety of English spoken in the city in the nineteenth century (see Knowles 1974; Hickey 1996). Certain important characteristics of the lenition processes are that (i) they affect several of the underlying stops in the system, but are probably most salient in /t, k/, and perhaps /d/, (ii) they are synchronically active variable processes, (iii) they involve affrications and spirantisations, and (iv), like the HGCS, can best be understood as involving stages of lenition, thus 'stage two' lenition to fricatives is frequent in certain environments (where affrication is also an option), 'stage one' lenition to affricates is frequent elsewhere (where frication is not a possibility), and in certain other environments no lenition seems to be possible. In other words, the processes are inhibited differently, according to the different prosodic and melodic environments in which a segment occurs.

In what follows, I focus on the lenition of /t/ and /k/. The processes involved can be summarised as in (6), where the ‘stageist’ understanding of lenition is overt. The transcription \[\theta\] in (6) represents a slit coronal voiceless fricative, the precise phonetic nature of which need not detain us here (but see Pandeli et al. 1997; Hickey 1984 for a detailed description of the articulation involved, and Honeybone 2002 for a discussion of the implications of this).

(6) 0  1  2  3  4
    t \rightarrow \theta/ts \rightarrow \theta/s \rightarrow h \rightarrow \emptyset
    k \rightarrow kx \rightarrow x

Lenition to [h] and total elision are possible in a very few highly restricted environments for /t/ and are included on the trajectory in (6) for completeness, but I do not deal with this below. Rather, I concentrate on the most common and characteristic lenitions, which involve the realisation of underlying stops as affricates and fricatives, in line with (6). Given that the processes involved are not well known, some evidence is given in (7). The evidence consists of a list of words from Liverpool English which illustrate the most lenition possible for the set of environments from (3), with some expansion. The data is largely taken from Honeybone (2001).
Process inhibition in historical phonology

A summary of the prosodic and melodic inhibition of the processes, in terms of the environments from (3) is given in (8).

    B [ __c ]  —  basically  [x]  ‘basically’
    c1 [ ´v__(v) ]  city  [θ]  crackers  [x]  ‘mad’
    c2 [ (v)__´v ]  attack  [θ]  okay  [kx]
    D [ c__ ]  fifteen  [t]  respect  [t]
    [ s__ ]  station  [t]  scally  [k]  a derogatory term
    [ l__ ]  adult  [θ]  welcome  [x]
    [ N__ ]  moment  [θ]  inconvenience  [kx]
    E [ #__ ]  taken  [θ]  come  [kx]

(8) A [ __# ]  lenition is possible to a fricative for both /t/ and /k/
    B [ __c ]  lenition is possible to a fricative for /k/; the segment /t/ hardly occurs in this environment due to phonotactic constraints
    c1 [ ´v__(v) ]  lenition is possible to a fricative for both /t/ and /k/
    c2 [ (v)__´v ]  lenition is possible to an affricate for both /t/ and /k/; it is possible that lenition to a fricative is also possible here for /k/
    D [ c__ ]  the degree of lenition varies according to the melodic content of ‘c’; see the discussion below
    E [ #__ ]  lenition is possible to an affricate for both /t/ and /k/

Environment D [ c__ ] requires special comment, as indicated in (8). The generalisations are slightly different for the two underlying segments involved. In the environment [ s__ ], there is typically no lenition at all for either segment, thus there is total inhibition in this environment. In the environment following a homorganic nasal (which I symbolise henceforth as [ n__ ]), only lenition to ‘stage one’ affricates occurs, to the exclusion of fricatives, for both /t/ and /k/. The environment [ l__ ] allows lenition to ‘stage two’ fricatives for /k/, whereas for /t/ this further stage of lenition in inhibited and only ‘stage one’ affricates occur. Finally, it seems further that [ f__ ] and [ k__ ] inhibit lenition for /t/.

While the whole situation is quite complex, certain generalisations in the inhibition of these processes can be recognised. There are also certain clear similarities to those generalisations which were recognised in the inhibition of the HGCS. I turn to these similarities in the next section.
4. Lenition inhibition revisited: can we explain why processes are inhibited?

There are certain observational generalisations which can be made about precisely which prosodic and melodic environments inhibit the innovation of phonological processes. In this section, I draw out some of these generalisations for both prosodic and melodic process inhibition; I then move to focus on only one of these types – those of a melodic nature. I propose a novel way of understanding the melodic inhibition of lenition processes. As we will see, this has connections with the study of ‘geminate inalterability’ but is unlike previous proposals in this regard in certain keys ways. Importantly, we will see that the mechanisms involved are not, in fact, restricted to geminate consonants and, while they provide strength to a segment, so that a process may be inhibited, this does not always result in total inalterability. In this way, we will see that what has previously been labelled ‘geminate inalterability’ is in fact part of a more general phenomenon.

The account of process inhibition developed here is not able to predict absolutely where process inhibition will occur, but this seems to be the right result, given that there are few absolutes in historical phonology. The proposal is predictive, however, even if it is not absolutely predictive, as it makes clear claims about what is a possible pattern in melodic process inhibition.

The prosodic generalisations are as follows. Environment $\varepsilon$ [ # _ _ ] and $c2$ [(v)__ _ ] can be inhibitory, and it is possible that the prosodic interpretation of $d$ [ _ _ ] (when it stands for an onset) can be inhibitory, too. These environments were inhibitory in both Liverpool English and the HGCS in that ‘stage two’ spirantisation was inhibited, although ‘stage one’ affrication was not; for certain segments in certain varieties, $\varepsilon$ was entirely inhibitory in the HGCS, as can be seen from (5): neither /p/ nor /k/ affricated at all in $\varepsilon$ in Mosel Franconian, Rhine Franconian, Ripuarian and Low Franconian, and, even in Low Alemannic, /k/ did not affricate in $\varepsilon$. As can be seen in (7) and (8), environment $c2$ seems to be inhibitory in Liverpool English in the same way, although this was not the case in the HGCS.

It is possible that the onset nature of $d$ [ _ _ ] played a role in some of the dialectal inhibitions for the HGCS, as illustrated in (5). In Ripuarian, for example, the lenition of /k/ and /p/ was inhibited generally in $d$ [ _ _ ] (where the consonant was /r, l/ or a nasal or the ‘first half’ of a geminate); this may also be the case for Low Alemannic /kl/.

The melodic generalisations typically apply to environment $d$ [ _ _ ]. They are that full geminates can be inhibitory, as can [ s__ ] and [ n__ ]. Geminates were partially inhibitory in the HGCS, because they only allowed stage one affrication (i.e. they inhibited the innovation of stage two fricatives). There is an inhibitory effect when the ‘c’ involved in environment $d$ is a segment which is homorganic to the following segment (for example in clusters involving nasals). The environment [ n__ ] is inhibitory in Liverpool English, as discussed in Section 3.2, and
it can be seen to be particularly inhibitory in some of the High German dialects in (5); in Mosel Franconian and Rhine Franconian, environment $d\ [\ c\ ]$ was only inhibitory (for /k/ and /p/) where the ‘c’ was a homorganic nasal or the first half of a geminate. In High Alemannic, lenition of /k/ was only totally inhibited when preceded by a homorganic nasal. In Liverpool English homorganicity has another effect: for /t/, the environment $l\ [\ ]$ only allows affrication, whereas both affrication and spirantisation can occur to /k/ in $l\ [\ ]$.

Finally, we can note that the environment $s\ [\ ]$ was inhibitory in the HGCS and in Liverpool English. There may also be other effects, but I set these aside here, in part because the generalisations are not so clear. In the next section, I proceed to analyse the generalisations discussed here in greater detail and to move towards a deeper understanding of the inhibition involved.

4.1 The prosodic inhibition of process innovation

It is clear from the generalisations discussed above that ‘initial’ environments are prosodically inhibitory to lenition. Word-initial, foot-initial and perhaps also syllable-initial (i.e. onset) environments have the potential to inhibit the innovation of a phonological process. I simply note these facts here and move on, however, because, as was noted above, my main aim in this paper is to investigate and account for the less well recognised effects of melodic inhibition, which I turn to in the next section. For this reason, I do not investigate the prosodic facts in detail beyond this initial recognition of shared initialness.

It is worth noting, however, that several theoretical proposals have been made to account for these effects (indeed, on the whole, prosodic inhibition is better understood than melodic inhibition, which is one reason why my focus is on the latter). Two key types of proposal have been made in this regard: that abstract prosodic licensing is responsible for this type of prosodic inhibition (as proposed by Harris 1994, for example), or that the effects are a facet of the greater prosodic prominence (and hence salience) which initial segments have over medial or final prosodic positions.8

4.2 The melodic inhibition of process innovation

I turn now to the factors which are relevant to melodic process inhibition. Many of these are little investigated and understood, but, as we will see, the potential that the generalisations recognised here have for our understanding of historical phonology is great. It will be argued that they reveal interesting facts concerning the nature of the phonological interaction between adjacent segments.
It is clear that geminacy provides the two halves of a geminate with the ability to inhibit the innovation of processes. As has been noted above, this has been tied in with other factors in the literature on 'geminacy inalterability' (e.g., Hayes 1986; Kirchner 1998). However, I argue here that previous approaches to this observation misplace the locus of explanation and miss the potential generalisability of the situation.

After discussing cases like v-Weakening in Persian (briefly mentioned here in Section 2.1), Hayes (1986) proposes that the fact that geminates do not tend to undergo lenition processes is due to a 'Linking Constraint' which relies on the existence of the association lines which link elements (which are 'features' for Hayes) to root notes, and hence to skeletal slots, as in the representation for geminates given in (1).

The 'Linking Constraint' is formulated as a constraint on rules and has the effect that rules (such as spirantisation rules) which are formulated to affect singleton segments do not also affect any part of a geminate, even though the structural description of a rule might include the first half of a geminate. As Elmedlaoui (1993) explains, however, such accounts face a substantial problem – they "all share tacitly … the assumption that a given spirantisation rule restricted so as to apply only to geminates should not be less natural than one which is restricted so as to apply to just simplex segments" (1993:134). Both kinds of rule are equally conceivable on Hayes proposals, and are tacitly predicted to be equally likely to take place. However, there seem to be no known cases of lenition processes which only affect geminates to the exclusion of singletons, so this prediction is not borne out. We might also note that geminacy does not always provide for total inalterability. In the HGCS, geminates lenited one stage down the lenition trajectory, rather than a possible two stages, so there was some inhibition involved, but nonetheless a phonological process was innovated which clearly altered the geminates involved.

While Hayes’ approach seems to be broadly on the right lines, I argue that it situates the source of the inhibitory potential of geminates in the wrong place. I propose that it is the sharing of subsegmental material that gives a segment the ‘strength’ to resist the introduction of processes. Where adjacent segments share elemental material, this locks them into a word’s phonological structure. It is thus this positional strength-through-sharing which can partially or fully inhibit a lenition process from affecting the segment, rather than an unmotivated condition on rules.

The notion of ‘strength’ developed here is very different to the type of segmental strength which was mentioned in Section 2.2. It is not an inherent property of segments, but is derived from the interaction between segments. The strength that can be gained by a segment in this way through the sharing of individual elements percolates up to become a property of the whole segment and this accounts for the fact that the lenition process is partially or fully inhibited from affecting the seg-
ment in question. This avoids Elmedlaoui’s problem – it predicts that there should be no processes which only affect geminates (or other types of consonant cluster, as we shall see directly) but do not affect singletons, and this seems to be the right prediction to make.

This approach is easily extendable to account for other cases of melodic process-inhibition. The other environments which are identified as inhibitory in the preceding section are also straightforwardly characterisable as those where elements are shared. The environment [n__] is a clear case of this, as shown in (9); such clusters are, in fact, often referred to as ‘partial geminates’.

The proposal also accounts for the case of [l__] in Liverpool English (where /lt/ was inhibitory, but /lk/ was not) because /l/ and /t/ share [coronality], while /l/ and /k/ do not. In addition to this, if certain independently proposed assumptions about the phonology of Germanic languages are accepted, then this proposal can be extended to account for the [s__] environment, which was inhibitory in both the HGCS and Liverpool English. If we assume, following Iverson & Salmons (1995), that stops such as /p, t, k/ are characterised by the element [spread], we can extend the key proposal here (that element-sharing gives a segment strength) to account for the exceptional behaviour of segments in the [s__] environment. The relevant representations for this are shown in (10), which follows Iverson & Salmons (1995) in representing the two segments as sharing a laryngeal element. I argue that the two segments form a kind of ‘partial laryngeal geminate’, parallel to the ‘partial place geminates’ of (9).
The proposal contained in this section is an attempt to account for some of the recurring patterns which are found in melodic process inhibition. It naturally copes with the data which it was designed to account for, but it would be far more persuasive if it could be seen to apply equally well to unrelated data of a very different kind. I turn to such data in the next section.

5. Back-up and extension

In order for the proposal that ‘sharing gives strength’ to be compelling, the mechanism will need to extend ‘explanatorily’ beyond the precise kinds of facts that it was designed to account for. This would naturally include other cases of consonantal lenition processes. More impressive would be if it could be seen to apply to segments and processes which are not obviously so similar. Rather than focusing on further similar examples of lenition, I turn now to a very different type of phenomena, the ‘English ~ Change’.

5.1 The ‘English ~ Change’

The claim made in Section 4.2 is that adjacent segments can be made ‘stronger’ through the sharing of elements. If the approach is generally applicable to adjacent segments, then we might predict that it can be extended to account for interactions in consonant-vowel sequences. In this section, I consider some data which shows that this is, indeed, the case. This can only be expected if vowels and consonants are assumed to be made up of the same elements, which might then be shared between them. As explained in Section 1.1, this is precisely what is assumed in element-based approaches to segmental structure.

To investigate element-sharing between vowels and consonants, a process is required which affects vowels and is in some way analogous to the type of lenition
processes discussed above. The process which I call here ‘the English u Change’ ful-
fits these criteria perfectly. This process is well-known in the anglicist tradition. It
involved the unrounding and lowering/centring of the vowel /u/ to give [ʌ] (see, for
example, Luick 1914–1940 and Dobson 1968). Once lexicalised, this process gave
rise to the contrast between /u/ and /ʌ/ which exists in many varieties of English.
It is analogous to consonantal lenition processes because it was an unconditioned,
non-combinatory change.

The process was quite general. As Dobson explains “M[iddle] E[nglish] ʌ was
originally the high-back rounded vowel [u]. In Pres[ent-Day] E[nglish] in most
words it has been unrounded and lowered to [ʌ], but in some words [u] is re-
tained because of labial and other influences” (Dobson 1968:585). This quotation
also indicates the few environments in which the process was inhibited. One cru-
cial aspect of the commonest inhibiting environment was that the preceding (or
sometimes following) segment contained the element [labiality]. The process thus
occurred in words such as cut, love, suck but not in put, full, wood.

We can understand these exceptions in the same way as those discussed for
purely consonantal interactions in Sections 3 and 4 above, if we assume such
representations as those in (11).

\[(11)\]

\[
\begin{array}{l}
/p/ \quad /u/ \\
| \text{occlusion} |  \\
| \text{spread} |  \\
| \text{labiality} |  \\
\hline
\end{array}
\quad
\begin{array}{l}
/ʃ/ \quad /u/ \\
| \text{frication} |  \\
| \text{spread} |  \\
| \text{labiality} |  \\
\hline
\end{array}
\]

The u → ʌ process was inhibited precisely where the vowel was adjacent to a labial
consonant. As explained in Section 1.1, /u/ is considered to consist of the element
[labiality]; this is also, naturally, a part of the make-up of labial consonants, and
this allows for the elemental sharing of the types shown in (11).

This process, while somewhat different from the cases of consonantal lenition
discussed above, is nonetheless another clear case of melodic process inhibition,
where the sharing of elements between adjacent segments serves to inhibit the in-
novation of a phonological process. Furthermore, it exhibits precisely the type of
consonant-vowel interaction which was seen to be predicted by the model at the
start of this section.\(^{10}\)
6. Conclusion

A key assumption in this paper has been that phonological processes can be inhibited in certain prosodic and melodic configurations when they are innovated into a language. I have argued that certain types of inhibiting environments can be seen to have been active in various, independently innovated phonological phenomena, and that we can and should generalise about these and seek to explain them.

In the several sections of this paper, I first described a set of observably inhibiting environments, and then focused on the notion of melodic process inhibition, proposing that the sharing of autosegmental phonological elements can give a segment 'positional strength', which enable it to resist or impede the introduction of a process where two segments are bound together through element sharing and hence fixed into the phonological structure of the word. This fixing is the source of the strength which has the effect that non-combinatory processes, such as lenition and vowel decomposition, can be inhibited from affecting the segment concerned. This is, I argue, a step in the direction of understanding process inhibition. If correct, it also provides corroborating evidence for the model of segmental structure adopted here. I believe that the merits of the approach explained here show that the notion of process inhibition deserves further study and, ideally, integration into a model which accounts for both where processes can be innovated and where they cannot.

Notes

1. I would like to thank the audience at the Melbourne ICHL in 2001, and the reviewer of this manuscript, for both their encouraging and their cautionary comments, which, I hope, have helped considerably to tighten up the argumentation. Where certain controversial assumptions remain here, they are certainly not to be blamed.

2. Analysts differ at times as to which types of phonological processes are to be counted as cases of lenition and which as cases of its opposite: fortition. For the purposes of this paper, it is not, in fact, of real importance whether the processes discussed are cases of lenition or of fortition. What is truly important is that they represent unconditioned processes which can be placed on a type of trajectory, as explained below, in (2). I proceed in the assumption that the processes are lenitions, however, following one tradition of scholarship.

3. While similar (and first-hand) definitions can be found elsewhere in the lenition literature, this short quotation has taken root in citing traditions and is very frequently found in initial definitions on lenition. This point is discussed further in Honeybone (2002); in this paper, I simply follow tradition in repeating it.
4. The approach developed by Macken & Salmons (1997) and Holsinger (2000) focuses on 'strengthening' or 'fortition' as well as lenition, and in some respects that approach and the one developed here diverge at this point, not on the existence of cases of strengthening, but principally in terms of the status of affrication as a type of phonological process. The points made in footnote 2 are relevant here, and the argumentation for the position adopted in this paper can be found in Honeybone (2002).

5. This process is sometimes considered in connection with another which affected the other stops inherited from Germanic (/b, d, g/). This is, however, generally recognised to be a separate process from that which I discuss here under the heading 'HGCS' and is typically thought to be both "later and more geographically restricted" (Davis, Iverson & Salmons 1999:192). As in other recent work (e.g., Vennemann 1984), I focus only on the affrico-spirantisation of the HGCS.

6. The formulation of the HGCS in (4) makes use of at least one simplifying and one controversial assumption. While both invite further comment, space need not and cannot be devoted to such discussion here, as neither point negates the discussion of the environment of the processes which is to come (both are discussed in detail in Honeybone 2002). The simplifying assumption is that the reflexes of Germanic /t/, which are symbolised in (4) by 'ʒ', are simply a type of coronal fricative. These segments were voiceless (i.e. characterised by the element [spread]) and their place of articulation can be characterised by the element [coronality]. The controversial assumption is that the fricatives produced by the HGCS were not (at least, at first) geminates. There is good evidence that the fricative products of the HGCS were geminates at some point in the history of German, and Davis, Iverson & Salmons (1999) make this an important part of their analysis, but, I argue in Honeybone 2002, that there is also good reason to believe that the most phonologically natural and parsimonious account of the HGCS involves first a process of the type given in (4) and only later an unconnected gemination of (only some of) the resultant fricatives. The data from Liverpool English which is to be discussed in Section 3.2 provides further evidence for the position that I adopt here: as we will see, there are remarkable and substantial non-trivial similarities between the HGCS and this data but there is absolutely no evidence of geminacy in the derived fricatives. This shows that gemination and spirantisation of this type are, at least in principle, separable. A further simplification in (4) is that it does not show that the original plosives were, in fact, aspirated; this is a common assumption about the HGCS which I share but leave out of the formalisation in (4) for the sake of simplicity.

7. To expand Keller’s abbreviations for the dialects concerned: Highest Alem. = Highest Alemannic; H. Alem. = High Alemannic; L. Alem = Low Alemannic; Mos. Fr. = Mosel Franconian; Rh. Fr. = Rhine Franconian; Rip. = Ripuarian; L. Franc. = Low Franconian; L. Sax = Low Saxon. The italicised example words are contemporary standard German, the others are dialectal.

8. It is also worth noting here, as a reviewer points out, that initial environments, such as /#__/ have elsewhere been argued to be the classic fortition/strengthening environments. This observation is not incompatible with the model and mechanisms developed here, to the extent that the notion of strengthening can be reconciled with the notion of positional strength which is proposed here.
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9. Iverson & Salmons (1995) assume that the reason why such clusters as /st/ lack appreciable phonetic aspiration in the stop release phase is that there is only one [spread] specification in the cluster, which is shared autosegmentally between the fricative and the following stop; the glottal spreading gesture involved thus occurs only once. This means that, by the time that the stop cluster is finished phonetically, the glottal gesture is already over and the phonetic effect of this is that there is little or no aspiration.

10. While all sources agree that labiality is the principal inhibiting factor here, Dobson (1968), among others, points out that certain other melodic factors contributed in a few cases to the inhibition of the ō change. Thus, at times, the preceding labial consonants "require to be assisted by" (Dobson 1968:720) following consonants such as /ʃ/ or /l/. Interestingly, both of these segments can be seen to have properties in common with /o/ (e.g. labial activity in the case of /ʃ/ and velar activity in the case of coda /l/). Also, such previous analyses have often recognised the role that sharing of labiality played in the inhibition of this process, often in a pre-theoretical way. This is a factor in favour of the notion which is formalised in this paper (that element sharing powers melodically driven process inhibition) as it shows that it has a history in the discipline, as many allegedly novel proposals do.

References

Process inhibition in historical phonology

Reconsidering the canons of sound-change
Towards a ‘Big Bang’ theory

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1. Introduction

Despite 150 years of investigations into the degree of phonetic regularity in sound-change – including Labov’s (1981, 1994) seemingly definitive demonstration that some phonological change is sufficiently systematic to count as ‘Neogrammarian sound-change’ – much about such ‘regular sound-change’ remains poorly understood. In (1) are listed several such issues that are, at present, the major unresolved questions facing all attempts to understand, not only sound-change in general, but also any given sound-change:

(1) Unresolved Issues Concerning Sound-Change(s) –
   a. the range of conditioning factors typically relevant at the onset of a change;
   b. whether the same conditioning holds throughout the ‘lifespan’ of a change;
   c. the types of alterations possible within this conditioning;
   d. whether such alterations prevent successive instantiations from counting as the ‘same’ change;
   e. how long a change remains ‘active’;
   f. whether the point of origin of a change can (or should) be distinguished from its spread/diffusion (cf. Labov 1966ff.; Wang 1969ff.; Milroy & Milroy 1985; Milroy 1992);
   g. exactly where in the lifespan of a change the purely phonetic conditions recognized by the Neogrammarians hold.
More generally, sound-change has a sociolinguistic side (cf. Labov’s work, cited above), a phonetic side (demonstrated most convincingly in recent years by Ohala 1974, 1989, 1993, etc.), and also a phonological side. This phonological aspect was advocated early on by Bloomfield (1933), who stated that, in sound-change, “phonemes change” – i.e., in some sense, change is located in abstract units of grammar1 – but later also by Kiparsky (1965, 1988) and related work within a generative framework. Thus, the most relevant and salient question concerning sound-change is that given in (2):

(2) What are the respective roles in sound-change of phonetic, phonological, and social factors?

In this paper, we argue that a serious consideration of these crucial issues and of their possible resolution motivates what can be called a ‘Big Bang’ theory of sound-change. A crucial distinction must be made between the inception/onset/point-of-origin of a change – what we refer to here, following Andersen (1989), Milroy (1992), and others, as an ‘innovation’ – and the dimensions along which it spreads. We see this point of origin as necessarily involving both a highly restricted context and a temporally quite restricted domain, too (metaphorically rather like the instant of creation of the universe within the cosmological Big Bang theory – cf., e.g., Weinberg 1993 – though clearly not quite that brief). However, this brief period determines much of the future trajectory that the innovation takes as it spreads through an individual’s usage and through a speech community. We posit, moreover, that the nature of the conditioning factors associated with an innovation can change during the period of spread, and that the dimensions along which this spread takes place are quite varied. The key elements in this model are sketched in (3):

(3) A ‘Big Bang’ Theory of Sound-Change –
   a. sound-change originates in a very ‘small’, highly localized context over a relatively short temporal span;
   b. purely phonetic conditions govern an innovation at this necessarily somewhat brief and limited point of origin;
   c. this brief ‘burst’ of (an) innovation partially determines its future trajectory as it spreads through an individual’s usage and through a speech community;
   d. the purely phonetic conditions of (b) are rapidly supplanted during spread – stage (c) immediately above – via speakers’ imposition of phonological and sociolinguistic conditions, with the result that the future course of the process is thereby deflected;
   e. further reanalyses wholly or partially in terms of morphological and/or lexical conditions (= morpholexical – i.e., ‘grammatical’ –
ones) represent commonly occurring ultimate divergences from the initial unity of the closely contextualized original innovation (regarding the later stages of at least one such development, see Janda 1998 on High German umlaut).

Insisting on the obligatory early presence of fine phonetic conditioning (à la Ohala) has at least three important benefits. First, it explains why regularity holds (see Joseph 1999 for further discussion): purely phonetic environments guarantee that a change will be applicable whenever its most general conditions are met, since phonetic environments, almost by definition, are maximally general. Second, it explains when regularity necessarily holds: i.e., definitely at the outset, due to the phonetic conditioning, and thus as long as the phonetic conditions are relevant thereafter (cf. Anderson 1981); recall from (3d) the assumption that these conditions can change. It is important to note further that regularity in the result of a change may be achieved by other generalizations of conditioning environments, but also that only when phonetic conditions constitute the sole relevant environment will there of necessity be regularity. Third, it follows necessarily that grammatically- or functionally-based exceptions to an innovation (a ‘sound-change’) are absent from the inception stage, thereby providing an answer, in the negative, to the question of whether there exists ‘grammatically conditioned sound-change’ (here cf. also especially Hock 1976): no, not at this stage of the lifespan of a sound-related innovation.

Articulating such a synthetic view of sound-change is necessary because much of the literature that purports to discuss sound-change has failed to appreciate a crucial and highly significant distinction: namely, that between an innovation and a diachronic correspondence, as emphasized by Andersen (e.g., Andersen 1989:12–13) and others (e.g., Jeffers & Lehiste 1979:1, who distinguish ‘phonetic correspondences’ from ‘phonetic changes’). An innovation is the dynamic alteration that occurs at the point of origin: i.e., the transitional course of one event as it happens and is propagated forth in what is, essentially, ‘polysynchrony’ or ‘micro-’ or ‘linear diachrony’. A correspondence, however, is the static relationship that exists between comparable elements in different stages of a language – the juxtaposition, therefore of two temporally distinct states, regardless of the number of events intervening between them – and thus characterizable, in essence, as ‘macro-’ or ‘polar’ diachrony.

Many statements of sound-change in the literature are actually instances of correspondences, and claims about possible and impossible sound-changes are often statements, not about changes, but about correspondences; as such, they are actually somewhat misguided and misleading. For instance, the famous case of Proto-Indo-European [PIE] *dw turning ultimately into Armenian [erk] – see (4a) below – is really just a correspondence, compressing numerous less drastic alter-
ations, some of which are listed here in (4a). This is also the case with other instances that are perhaps less drastic and more mundane – but no less significant in terms of what they show. See, e.g., the sample in (4b–d), where the correspondences are stated, along with some (hopefully enlightened) guesses as to the various innovations that added up to the particular correspondence (whereby the ellipses indicate there may be more steps beyond those signaled here: i.e., these steps may also in fact be correspondences, rather than simply innovations):4

(4) Correspondences (Indicated by ‘>…>’) vs. Innovations (Indicated by ‘>’)

a. PIE *dw >…> Arm[enian] erku; e.g., “two” PIE *dwo(w) >…> Arm. erku (presumably via *dw >…> dg >…> tg > tk > r >…> [erk]; cf. Hock 1991:583–584);
b. s >…> r /V__V (e.g., from early to later Latin; perhaps via s > z > ž ≥ r);
c. -Vns >…> -Vf (e.g., from pre-Oscan to Oscan; presumably via ns > nts > nt ≥ n > nf > f);
d. t >…> ð /V__V (e.g., from Latin to Spanish; via t > d ≥ ð).

To motivate this ‘Big Bang’ model, beyond discussing the strictly conceptual bases listed above, we turn, in the remainder of this paper, to three case-studies that illustrate the model clearly and empirically: a re-examination of two well-known changes, Romance e-prothesis in sC- clusters and Swiss German o-lowering, and an examination of one relatively neglected contemporary change – s-retraction in present-day English clusters like #str…/…r#str….

2. Romance vowel-prothesis

The basic facts about vowel prothesis in Romance, the so-called ‘s impurum’ phenomenon – here illustrated with Spanish and French, though the effects were more widespread – are that Latin word-initial clusters of sC- ended up with a prothetic front/high vowel: e.g., e in Spanish and French, as in Latin schola “school” >…> Spanish escuela, French école (etc.); Latin sponsa “betrothed” >…> Spanish esposa, French épouse (etc.). The treatment given by most discussions of Romance linguistics for this development (e.g., Boyd-Bowman 1980:125; Mendeloff 1969:18; Posner 1966:290) presents it as something that took place in an environment that depends always and only on word-boundaries. However, following Hock (1976), we take word-boundary to be a grammatical construct, not a phonetic or phonological one, and thus one that, in the ‘Big Bang’ model, should not figure in sound-change as rigorously defined (what in our view is best labeled as ‘sound-change...
proper’ or ‘sound-change in the strict sense’). For example, word-final consonants can often be resyllabified with a following vowel-initial word, but they clearly cannot be resyllabified before a pause or before a consonant-initial form; hence, there are many solid phonetic differences hiding in the notation ‘/__#’.

Importantly, from our point of view, what is generally overlooked in most treatments of Romance prothesis – though Lausberg (1967) and Lloyd (1987) are exceptions in this regard – is that, in origin, this development was not a word-boundary phenomenon; rather, it was sensitive to sentence-level sandhi conditioning, referred to in German under the rubric of Satzphonetik. That is, originally the prothesis was just for initial sC- after a consonant – / ...C#__sC ... – but not after a vowel. This distribution is still preserved in (prescriptive) standard Italian, where one finds in scuola “in school”, with prothesis, but la scuola “the school”, with no prothesis. Thus, it seems that this innovation was, at the outset, a syllable-structure-based development repairing the per se unsyllabifiable sequence ...C # sC ... (but not ...V # sC ... , which required no adjustment). The extension of prothesis to any word-initial sC- cluster, regardless of the preceding sound, must be a later (non-phonetic, non-syllable-structure-driven) generalization. This conclusion is supported (cf. Lausberg 1967) by the non-appearance of prothesis in those Romance dialects where final consonants were lost earliest and most extensively, since this bled away the initial element of the crucial ...C#__sC ... environment.

The view of Romance V-prothesis from the vantage point of a ‘Big Bang’ model of sound-change is thus roughly as follows. Phonetics was relevant during the initial phase, when the innovation began – in the form of a syllable-structure-driven repair strategy – but then subsequent speakers reinterpreted the basis for the innovation and/or extended it along different parameters, giving the change a very different character as its ’lifespan’ unfolded. The dephoneticizing generalization from a word-initial post-consonantal context to a merely word-initial one (pure and simple) in Spanish, French, etc. – which minimized and ultimately completely eliminated the once purely syllable-structural basis for prothesis – presumably arose when prothesis was reanalyzed as being crucially dependent on word-boundaries alone, and so as at least partly grammatical in nature (in the absence of a consistent phonetic interpretation for ’word-initial’ position). The endpoint (for Spanish, at least) is a strong morpheme/word-structure constraint (though one open to various sorts of analyses, depending on the theoretical ’ground rules’) – but, in any case, a generalization outside the realm of phonetics per se, and now clearly less phonetically driven in Spanish than it was originally. We note, for instance, that there are two Spanish variants for the name of former Czechoslovakia: Checoslovaquia, without (compound-internal) prothesis, and Checoeslovaquia, with prothesis; this variation is something that would be unexpected (or at least much less expected) if the process were purely phoneti-
cally driven (since the input contains an [o] available for resyllabification with the following sibilant).5

3. Northeastern Swiss German vowel-lowering ([o] > [ɔ])

Regarding the preconsonantal [o] > [ɔ] change in northeastern varieties of Swiss German, it can be said in overview that this lowering (and apparent laxing) originally occurred only pre-rhotically (= / _r), but that most relevant dialects now lower before a much larger and more disparate range of consonants. In villages whose dialects show lowering also before, e.g., all obstruents except [b], this kind of generalization via simultaneous dephoneticization and phonologization appears to serve sociolinguistic ends: that is, such villages seem to have exploited the mechanism of overgeneralization (’hypercorrection’) familiar from Labov (1972; cf. also Janda & Auger 1992) in order to reinforce their local identities.

The (sub)dialects in question are spoken in the cantons of Schaffhausen, Thurgau (Thurgovie), St. Gall(en), Appenzell, and Graubünden (Grisons). The overall high degree of phonological variation between and among the relevant village dialect-groups, though usually accompanied only by minor differences between neighboring villages within any one group, has long attracted the attention of phonologists (including structuralists like Moulton 1960, dialect-atlas compilers like Hotzenköcherle & Trüb 1962:41, and generativists like Kiparsky 1968 or Robinson 1976). The most useful source is Keel (1982:42–85, 96–98, with earlier references there); perhaps most striking is the lowering-pattern found in Schaffhausen, which was described by Wanner (1941:26–29). Thus, all Schaffhausen varieties reflect lowering of closed-[o] to open-[ɔ] before r, but each of them has also generalized this rule in various ways; these generalizations fall into four lowering-patterns, summarized by Keel (1982:49–50) as follows:

(5) Canton-of-Schaffhausen [o]-Lowering Generalizations –
   a. in the city of Schaffhausen proper, [o] > [ɔ] before r and nasals (but not obstruents);
   b. in 13 villages, [o] > [ɔ] before r, nasals, and coronal obstruents (but not other obstruents);
   c. in 17 villages, [o] > [ɔ] before r and coronal obstruents (but not other obstruents, or nasals);
   d. in 5 villages, [o] > [ɔ] before r, coronal obstruents, and non-coronal obstruents except b (but not nasals).

Based on such patterns and on other data (cf. the references above), it emerges that the original sound-change at work in the canton of Schaffhausen (and many
neighboring areas; cf. the overview in Keel 1982:42–46, 66–78) was a lowering of ə only before r. The lowering in question was then extended – differently in different (sub-)dialects – to other phonological environments (defined by a following sound), in ways that sometimes obey implicational principles (e.g., non-coronal obstruents condition lowering only if coronal obstruents do) but often are independent (e.g., obstruents and/or nasals can freely be triggers or not).

Crucial here is the fact that the various generalizations of the ə-lowering rule do not involve environments which, for articulatory or auditory-acoustic reasons, would be expected to favor a lowered (open-)ʃ. As already emphasized above (in concurrence with Ohala 1974, 1989, 1993, etc., and Anderson 1981), it is only the very earliest, allophonic beginnings of sound-changes that tend to show absolute phonetic (‘natural’) motivation, and so the phonologization of any inherent perception- or production-oriented tendency of the human vocal/auditory apparatus normally requires that such a (psycho)physical characteristic be exaggerated in some way.

In this way, Ohala (1989:191) argues that listeners’ ‘hypo-corrections’ and ‘hyper-corrections’ of perceived speech must play a far more significant role in the origin of sound-change than any alleged ease of articulation or perception (cf. also Ohala 1993). This is consistent, too, with Labov’s (1972:165) view that ‘sub-linguistic fluctuations’ precede sound-change, which itself yields ultimate regularity. In fact, it could thus be said (cf. Janda 2000:305) that “sound-change tends to ... [remain] regular, not due to persistent influence from some kind of articulatory or auditory/acoustic phonetic naturalness, but instead because exaggerations and misperceptions of phonetic tendencies tend to involve stepwise generalizations based on the natural classes of phonology” (i.e., the abovementioned coronals, nasals, obstruents, and the like). The reasons for these (over)generalizations can be sought in the social-group-marking function so often brought to light in sociolinguistic research. For instance, in discussing the mechanism of sound-change, Labov (1972:160–182) characterizes the third stage in terms of a situation involving ‘hypercorrection from below’ (i.e., below the level of – explicit – social awareness): “… [s]ucceeding generations of speakers within the same subgroup [as the speakers originating the change], responding to the same social pressures, carr[y] ... the linguistic variable further along ..., beyond the model set by their parents ... [, so that] the variable is now defined as a function of group membership and age level”. The situations labeled by Labov as the final (seventh and eighth) stages in such ‘[sound-]change from below’ also involve extensions.6

From a ‘Big Bang’ standpoint, then, the lowering before [r] was the ‘big bang’, and the subsequent non-phonetically-driven, phonological-and-sociolinguistic generalizations represent the aftermath of this event, corresponding to stage (d) in the model sketched in (3) above.
4. Contemporary English s-retraction to [ʃ]

Finally, we turn to the present day for what appears to be a relatively recent innovation in English, though one which seems to be increasingly frequent, and thus apparently spreading. At issue here is the pronunciation of a canonical /s/, formerly [s], with a retracted, somewhat alveo-palatal, [ʃ]-like ‘shibilant’ realization, especially within clusters, as in [ʃ]treet (vs. the variant [s]treet, with an alveolar sibilant). For some speakers, this particular cluster can now even be realized as [ʃr-] (i.e., without ...[t]...). Discussion of this development in the literature is surprisingly sparse: Labov (1984:50) remarked on this pronunciation for Philadelphia English – and not just for African-American Vernacular English [AAVE] (overall) – and, more expansively, Janda, Joseph, & Jacobs (1994), Shapiro (1995), and Lawrence (2000) have discussed it, as well. But the general focus of these studies has been primarily on the context involving [s] > [ʃ] only before [tr] (though with some further consideration of [s] > [ʃ] before [tʃ]).

What is interesting about this development, from the perspective advocated here, is that it is spreading, not just in the sense of being characteristic of (seemingly) more and more speakers, but also in that the contexts for the retraction are being extended. Labov (1984:50) first noted this wider occurrence of the retraction of /s/ for Philadelphia, and it was reported on in Janda, Joseph, & Jacobs (1994:80), as well: “We have recorded some speakers for whom the phonological distribution of this innovative initial /ʃ/ has expanded from words with initial str-, like street, to r-less forms like stone and even to sk-initial words like skill, particularly when the preceding word is pronounced with a final [r] (as in their [ʃkill]).” Such pronunciations are admittedly sporadic, in the sense that not every current speaker of English has this [ʃ]-realization, and even those who have it do not necessarily have it categorically (i.e., at all times). But our impression is that this pronunciation is getting to be strikingly rampant, and spreading to ever more contexts. A sampling of the forms we have collected is given in (6):

(6) Innovative [ʃ] in English clusters other than / __ tr –
   b. before [r] alone: diʃ[ʃ]respect;
   c. before a stop other than [t], with [r] following it: [ʃ]reen / [ʃ]rinkler;
   d. before a stop, with no [r] involved: [ʃ]till, [ʃ]chool.

There is some lexically determined variation in at least American English between /s/ and /ʃ/ in certain words of German or Yiddish origin, such as spiel, glockenspiel, or s(h)pritz, where at least some generally non-retracting speakers nonetheless have [ʃ]. There is perhaps a sociolinguistic dimension to the variation in such words, since knowledge of (or at least perceptions regarding) the origin of a word (i.e., the
source language of borrowings) may well play a role in whether one pronounces these words with a more German-like [ʃ] or a more (canonical) English-like [s]. While this is surely a different phenomenon in origin from the retraction more generally at issue in this section, the two may ultimately merge, and the innovative clusters with [ʃ] may eventually subsume the lexically specific instances just discussed here; if so, the foreign flavor that [ʃ] now seems to have in such words can be expected to be lost as s-retraction spreads (for more discussion of the ‘foreign’ affinities of palatal shibilants, see Janda, Joseph, & Jacobs 1994:80).

In any case, it is not just [ʃtr] clusters that are to be found now, and therefore it is unlikely that this phenomenon overall is a distant assimilation to [r], as Shapiro has suggested (however plausible this may seem within the very circumscribed context /ˈtʃtr/),9 or a local assimilation to an affricated realization of /tʃtr/.10 Still, given that the most robust effect seems to be found with str-, the cluster that first attracted linguists’ attention, it is reasonable to surmise that this represents the point of origination for this innovation. Further, from the viewpoint of a ‘Big Bang’ model, the occurrence of the relevant retraction in the wider contexts noted in (6) reflects an early, proto-generalizing stage for the innovation, where a nucleus of phonetic conditioning – with regularity on a highly localized basis – is undergoing rapid expansion along various paths (in this case, phonologically determined ones), with some lexical and even sociolinguistic conditioning now being relevant, as well.11 One can speculate regarding whether the shibilants in Modern Standard High German stehen “to stand”, spielen “to play”, and the like may reflect similar generalizing from an original change once limited to words like Strasse “street”, but this is at present no more than a hunch on our part.

5. Summation regarding sound-change

Each of the three present case-studies, therefore, is consistent with – and thus, by demonstrating feasibility, provides support for – the perspective afforded by a ‘Big Bang’ model of sound-change. Moreover, the model itself provides answers to the issues raised at the outset, rephrased here as questions and summarized in (7) – along with satisfying (we are tempted to say ‘definitive’) answers following each, given in italics:

(7) Solutions to the Issues Raised in (1) –

a. What range of conditioning factors is typically relevant at the onset of the change? Phonetic factors exclusively, and no other type.

b. Does the same conditioning last throughout the evolution (‘lifespan’) of the change? No, at least not necessarily (unless the change is very short-lived).
c. What types of alterations in this conditioning are possible? Besides altered phonetic analyses, there are generalizations to non-phonetic conditions: phonological, morphological or lexical (= morpholexical – i.e., ‘grammatical’), or sociolinguistic, and combinations thereof.

d. Do such alterations prevent successive instantiations from counting as the ‘same’ change? This question presumably remains open, but it is not obvious that much hinges on it.

e. How long does the change remain ‘active’? Not long at all, since the sound-change (i.e., the innovation) is a/the ‘Big Bang’.

f. Can (and should) the change’s point of origin be distinguished from its spread/diffusion? Yes, most emphatically!

g. Exactly where in the course of the change do the purely phonetic conditions recognized by the Neogrammarians hold? At the outset, definitely (see (7a) immediately above); possibly further on, as well, if that is the relevant path of generalization (see (7c) immediately above).

Thus, in its purely phonetic manifestations, sound-change is ephemeral, though fully regular within narrow bounds: in fact, the narrower and more circumscribed the original context is, the better we can define and determine the likely associated regularity. Moreover, sound-change rapidly yields to generalization along non-phonetic (phonological or morphological) and social lines that may contribute further regularity via extension to broader contexts. Consequently, it is fair to say that the Neogrammarians were generally right about sound-change, but not exactly as they or Labov (1981, 1994) envisioned.

In many cosmologists’ view of the early universe, the original ‘Big Bang’ took place over 13 billion years ago, but virtually all of the major developments which it entrained were completed within the first three minutes (again cf., e.g., Weinberg 1993). It is now the turn of diachronic phonologists – and phoneticians – to determine how long the initial phonetic conditioning and phonetic regularity of a sound-change tends to last before it yields to other sorts of regularity and, ultimately (if only eventually), irregularity.

Notes

1. The validity of Bloomfield’s dictum is clearest for unconditioned changes; conditioned changes pose greater challenges, however.

2. In a sense, then, regularity can be recognized through attention to micro-detail in conditioning, since this means, typically, that not many candidate forms are eligible for a given innovation. It is important to keep in mind that a sound-change can be regular even if it applies to only a handful of forms, as long as that handful exhausts the set of potential forms.
Thus, being ‘regular’ here is not to be confused with being widespread or numerous (or general).

3. As Andersen (1989:12–13) aptly puts it: “the word ‘change’ has commonly been employed … not to describe anything going on in the object of inquiry – language in diachrony – but rather to sum up a reified version of the linguist’s observations”. We observe further that, because the output of one sound-change can be affected by a myriad of other sound-changes, we seriously doubt that any particular correspondence could ever be legitimately deemed ‘impossible’ (of course, whether a particular correspondence is probable or not, or whether it is frequently instantiated, is an altogether different matter).

4. In this way, we are in sympathy with the spirit of Picard’s (1994:18) suggested principle of minimality (“Sound changes are always minimal, and so can involve no more than one basic phonetic property”). We take issue in part, however, with his particular instantiation of this idea, due both to the vagueness of some of the constructs that he employs (especially the notion ‘basic phonetic property’) and to its lack of empirical content (especially if one can get out of any potential problem simply by introducing another step in the relevant development).

5. At least for Spanish, too, we can venture a prediction here. A sociolinguistic dimension in e-prothesis may well emerge in the way that loanwords are pronounced (cf. the discussion of spiel, etc. in Section 4 below), since those Spanish speakers with the greatest knowledge of English – and the most near-native experience in using it – should in principle be able to pronounce a loanword like smog without prothetic e-. This would introduce into Spanish the possibility of variation within a speech community based on knowledge external to the original language-system (i.e., on knowledge about the language of origin for certain loanwords), and so could ultimately endow e-prothesis with a very different character from that found in the present state of the language (not to mention the primeval nature of prothesis in early Romance). Our hunch along these lines is unconfirmed by any direct evidence that differentiation of this sort already exists, so we mention it only as a representative topic for possible further research – i.e., as something to listen for.


7. The dating of this development is actually somewhat tricky. Lawrence (2000) suggests that it may have its origins in the 19th century, and Joseph (to appear) speculates that the current situation with [s/] variation in clusters could reflect the ‘bubbling up’ to the surface of long-suppressed variation in West Germanic – in which case the contemporary situation discussed here would be the aftermath of an older innovation. The issue of whether the present situation thus counts as the ‘same’ change as some 19th-century impetus, or even as a Proto-West-Germanic one – if there is any substance to the speculations just mentioned – echoes the question raised in (1d) above and addressed below in our conclusion.

8. This is the impression of others, too. Many of the students who were assigned the task of listening for examples of this development as part of our co-taught Linguistics 801 (Historical Phonology) course, offered in the summer of 2000 at the Ohio State University, recorded numerous instances of [ ][]treet, etc. Interestingly, though, there were some students who did
not encounter (or were unable to perceive) such examples. A readily available example of 
[wtr] can be heard in the pronunciation of strong as [wtrong] by a young Australian actor 
playing the role of the boy Lucius in the recent (2000) film Gladiator (this pronunciation 
occurs a little more than halfway through the film, when the title character is brought to the 
Colosseum in Rome).

9. We suspect that what may be most crucial about the presence of -r- in the core environ-
ment for the relevant change is not so much its retractedness (with retroflection or bunching 
of the tongue) as its rounding (cf., e.g., Ladefoged 1993:65 on lip rounding and English /t/).
The spread of such rounding across a cluster to its initial s- would then represent anti-
ecipatory (local) assimilation; the resulting rounded sibilant could then interpreted as [j] (see 
Ladefoged 1993:63 on the tendency for lip rounding with English [j])). We note also that 
Lubker & Gay’s (1982) research on anticipatory coarticulation of consonants before u in 
Swedish and in English found that labiality in Swedish may occur up to 500 milliseconds 
 prior to the articulation of u, but in English only up to 100 milliseconds prior to an u. This 
finding shows that two (relatively) closely related language-varieties can differ in the tim-
ing of anticipatory labiality, and so it would not be surprising to find differences between 
varieties of English in this regard – e.g., as we seem to see with [j] vs. [s] preceding tr in 
clusters. I.e., speakers apparently differ in whether or not they have a rounded sibilant as 
the initial segment in a cluster whose labiality emanates (in and through medial /t/) from its 
final consonant, /t/.

10. Lance & Howie (1997:356) note that a ‘fronto-palatal’-affricate occurs in /tr/ for many 
dialects of at least American English (e.g., beginning spellers sometimes write chrain rather 
than train), but it is not clear that one finds such affrication after a sibilant. That is, 
alveo/palatal affrication of the /t/ in str and its assimilatory anticipation by the preced-
ing /s/ should in principle yield [jfr], but we are not familiar with any reports documenting 
this pronunciation – which in any case would need one or more clean-up rules/processes in 
order to yield attested [jfr].

11. Moreover, this additional set of contexts for retraction – i.e., other than just before /tr/ – 
means that purely structural factors involving the distribution of [r] and other resonants 
vis-à-vis [s] and [j] (a set of considerations which Barry Blake urged us to consider) 
cannot be the primary cause for the retraction at issue. That is, if sibilant retraction were evident 
only in the environment before /tr/, one might be inclined to think that the complementary 
distribution of the sibilants occurring in words such as shrimp, with [j] before [r], versus 
slump, with [s] before [l], would allow the [jr] cluster to be analyzed as underlying /sr/, with 
an active retraction-process responsible for any surface cluster(s) with [j]. As intriguing as 
such a possibility may be, it is clear that, if there exist cases of retraction with no [r] involved 
at all, as noted in (6d), then there must be more going on here than just structural (distri-
butional) factors. Similarly, speakers with shpritz (with [j]) but sprinkle (with [s]) cannot 
have grammars in which all j-forms derive from an underlying /s(C)r/. Finally, there are di-

dialects – for example, at least some varieties of African-American Vernacular English – which 
have [s-] even in ‘canonical’ /f(C)t/ words: e.g., in [srmp] for shrimp. In future work, we 
plan to investigate two further possibly relevant additional considerations bearing on sibi-
lant retraction in English [j]treet, etc. The first of these involves the heightened potential for 
cross-dialectal reinterpretation as // of some Southern U.S. dialects’ retroflex(-like) – and
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hence more [ʃ]-like – /s/’s (cf., e.g., the pronunciation of Texas by George W. Bush) when they occur before tr. The second consideration involves the possibility that increasingly frequent affrication to [ts] of English aspirated [tʰ] could already be entraining a push chain whereby the fronter [s]-part of [ts] leads to a backer (more retracted) perception of original /s/, especially in clusters.

References


Case in Middle Danish
A double content system

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1. Introduction

The dismantling of the case system in Danish is traditionally explained as the direct result of certain phonological changes whereby the pronunciation of the vowel in unstressed syllables became less distinct, (the so called 'infortissvækkelse'), thereby causing a massive loss of inflectional case markings. In turn, this loss of case markings supposedly instigated the need for a more fixed word order. The empirical data, however, display certain oddities not covered by this stress-pattern-explanation. To mention one example: nouns apparently shed inflectional case markings much earlier than adjectives. If 'sloppy' pronunciation could have caused the disappearance of the nominative inflectional case endings in nouns like hund-ær “dog” and hest-ær “horse”, then why did it not cause the disappearance of the exact same ending in adjectives like ræt-ær “right” and full-ær “full”? In all four cases the -(æ)r marks the nominative in the masculine singular.

A single linguistic factor is seldom responsible for major structural changes in a language, and the Middle Danish sources themselves actually suggest another and more complex order of events than the one offered by the stress-pattern-explanation. Research on word order in Proto-Germanic (Hopper 1975), Old Norse (Faarlund 1989, 1990; Christoffersen 1993), and Old Danish (Pedersen 1993; Heltoft 1995, 2001), shows that the ‘free word order’ of older Germanic languages was not as free as presumed. Thus a more fixed word order is seemingly much older than the dismantling of case alone. This suggests that rather than being the result of the change in stress pattern, a more fixed word order might have been a participant facilitating the dismantling of the case system. In addition to this adjusted view of the relationship between case and word order, other factors such as the changing
status of the subject should be considered in order to better comprehend the major changes in the grammar of Middle Danish.

In this article I shall put forward the idea that the case system in Middle Danish of the 14th and 15th centuries might in fact have been active, but that parts of it had been subject to a fair amount of reinterpretation, resulting in some classical functions and characteristics being lost while new ones were gained. In support of this idea, excerpts from Middle Danish will be shown, especially (if not exclusively) from the manuscript B 69 of the Scanic Law from the mid-1300s. In B 69, as elsewhere, some remarkable distribution patterns regarding case are found.

2. The orthographic and linguistic skills of the Danish medieval scribe

Before presenting these patterns, a common traditional assumption concerning the orthographic and other linguistic skills of the scribes in Medieval Denmark must be contested.

It has traditionally been agreed that the change of intonation pattern left the scribes baffled with respect to the spelling of vowels in all unstressed syllables (cf. Brøndum-Nielsen 1918:131; Nielsen 1934:149 ff.). Indeed, in many of the manuscripts of Middle Danish no clear distinction is maintained between the different vowel qualities in these unstressed syllables. Instead different orthographic varieties are used to represent the ‘schwa’ sound: æ, e. Only a small group of manuscripts (most of which contain transcripts of the Scanic Law) maintain a distinction between the different vowels. The general assumption is that as the distinction was no longer in existence in spoken Danish at the time, the scribe would choose not to – and may not have been able to – retain the system of earlier stages of Danish. Instead he would simply write -e or -æ in all of these weak syllables, and the few written -i’s, -a’s and -u’s would be there for old times’ sake and correspond neither with any productive case system, for instance, nor with the pronunciation of spoken Danish at the time.

In the case of B 69, however, the scribe does maintain a distinction between the different vowels, but the distribution of these vowels is not quite as could be expected. In several places we find weak nouns as grammatical subjects with -a’s and -u’s, i.e. in the oblique form instead of the nominative -i and -a, and we even find noun phrases where the head appears in the oblique form while the modifier is in the nominative. In addition to the already mentioned increase in the use of written æ, it is precisely examples like these that lead to the conclusion that the case system was no longer in use by the 14th century, and the use of case as found in some sources has been judged ‘random’ and ‘unsystematic’ (Jørgensen 1990:138, 167). Examples of these unexpected case forms are given below (3)–(12).
Figure 1. Distribution of the nominative and oblique cases in the singular of all masc. and fem. on-stems in the B 69 of the Scanic Law. Count includes such occurrences as hin sæcti “the accused” as the adjective in this kind of construction follows the paradigm for an- and on-stems.

After careful examination of the Scanic Law in B 69, this lack of confidence in the scribe’s skills must be revised. For instance, a simple count of final vowels in the singular in all weak nouns of the an- and on-stems (cf. Figure 1 above), shows that when the noun in question is used as the first element in compounds, as the possessor in possessive genitive, as the noun in prepositional phrases, as the noun in ‘pure’ adverbials (i.e. not governed by a preposition, e.g. then tima “(at) this time”), and as object, the particular noun is in the oblique case in almost 95% of the data. In the remaining 5% we either find the graph -æ obscuring a conclusive analysis, or the nominative. In fact, the real discrepancies in terms of a classical case system are found in the subjects (and subject complements) as roughly a third of these constituents are in the oblique case, rather than the nominative. Instead of thinking of the scribe as unskilled, one might try to find an explanation for the figures concerning the subject.

The scribe of B 69 also shows a sense of awareness regarding the grammar of his contemporary Danish. I shall give two brief examples of this. In older Danish, as in other Scandinavian languages, the verb bøta “to pay a fine” governs a number of cases. In active sentences the agent subject is in the nominative, the damage done is in the accusative and the recipient of the fine paid is in the dative, as is the amount of the fine (instrumental dative):

(1) bøta thre-m marc-um
    pay three-DAT.PL mark-DAT.PL

In the course of time, however, the amount of the fine changed from the dative to the accusative. Examples of this change are abundant, and I will refrain from citing any of them here, simply pointing to the fact that in many manuscripts of Middle Danish both the dative and the accusative can be found, apparently with no real difference as to meaning (cf. Bjerrum 1966:38), but in B 69 the case form chosen
is consistently the accusative, an indication of the scribe's confidence in his own chronolect.

Another example of the scribe's confidence in his own language skills is the fact that on several occasions he inserted grammatical subjects where earlier manuscripts have none. The changing status of the subject in Danish played an important role in the overall structural changes of the language in the Middle Ages, and this will be examined more closely towards the end of the present article. At this juncture, to make the point of the scribe's linguistic skills it suffices to state that this change did indeed take place and that the scribe of B 69 brought his text up to date in several places with regard to this change. A single example of such an inserted grammatical subject is cited in (2a):

(2) a. _Hafwær man slokefrithu børn oc ær thæt eig thing has man concubine child and is _it_.subj not thing _liusd_ tha _scal han _eig _taka _arf æftir registered then must _he_.subj not take inheritance after _thæt_ (…) it (…) “If a man has a child by a concubine, and it [the child] is not properly registered, then he can’t inherit from it (…)” (DgL 216, 15–16)

In other manuscripts representing earlier stages of Danish, we find the same passage:

b. _Hauir man slokifrithu børn, oc æræ _[Ø]_ ey pinghiusd, _tha scal han ey taki _arf æftir _haust_ (B 76, DgL 38, 8–9)
c. _Hauir man slokefrithu børn. oc æræ _[Ø]_ ey thingliusd. _tha scal [han interlinear, later hand appr.1430] arf ey tæke æftir _haust_ (B 74, Chapter 61, Old Danish Dictionary Project)

Based on the kind of evidence presented here, it is fair to assume that the scribe of B 69 felt at ease with his own chronolect, and that he was not afraid to adjust the text when certain (old) usages may not have made sense to him, and, furthermore, that he was quite capable of doing so. True, some words are written in a manner hard to explain as anything but orthographic errors (cf. _stæfnu_ “to summon” as an infinitive verb, DgL 240,1), but the overall impression is that the scribe of B 69 was a very competent scribe and a confident language user. It would seem strange if this very competent and confident person did not have some kind of system for the distribution of case inflections in examples like (3)–(8) below. It will be the object of this article to show that such a system did exist and how it worked.
3. The double content case system

The theoretical background of this study is the Copenhagen version of functional grammar, a development of European continental structuralism (see papers in Engberg-Pedersen et al. (1996)). In accordance with the views of this school of linguistics, I distinguish between expression and content, and regard manifestations of a noun like *thiuf-ær* “thief” as examples of this word in the nominative, regardless of grammatical role (subject, object, etc.), and manifestations such as *thiuf-Ø* of the same word as examples of the accusative, regardless of grammatical function. Consequently, by insisting on this distinction, the description will have to deal with grammatical subjects in the accusative, for example, and label them thus when such occurrences appear, as indeed they do in Middle Danish.

In the B 69 manuscript of the Scanic Law, we apparently find a double content system. The expression level simply consists of the inflectional case markings, but these case markings would seem to function in two different areas of the content level, cf. directly below. I shall claim that the scribe of B 69 navigates in accordance with these two content systems, and that any discrepancy is due to conflicts between these two systems.

**The classical case system:** We are most familiar with one system, the one most of us were taught at school. It is used to show grammatical relations and semantic roles between some kind of governing word – for instance, a verb, a preposition or an adjective – and the nominal in question. An important function of this system is the identification of subjects and objects, and a grammatical feature such as agreement is a dominant part of the system. In the following I shall refer to this system as the classical case system. This system apparently works with regard to objects, compounds and (the majority of) Prepositional Phrases (PPs) (cf. Figure 1 above).

**The cohesive case system:** I use the term ‘the system of cohesive case’ for the other system, as this system concerns the use of grammatical means in order to create cohesive text. The term ‘cohesion’ is used in the manner described by Halliday & Hasan (1976). This system has to do with the organisation of the information of a message, and it encompasses features such as given and new, topic, foreground and background, and focus (cf. Chafe 1976; Givón 1983; Togeby 1993; Heltoft 1996; Nølke 1995, 1996). This other system, the system of cohesive case, is not as automatic as case in the classical case system. In the classical case system, case is typically triggered by some specific word. Put rigidly, the verb *bítha* “to await” always governs the genitive, the preposition *at* “by/at” always governs the dative, and so forth. In this other case system, the system of cohesive case, the distribution of the different cases is to some extent a matter of choice which is left up to
the speaker (in the case of B 69, the scribe) to decide upon in a manner that will soon become apparent (cf. the analyses in (7) and (8) below). The system of cohesive case contains an element of intention (cf. Togeby 1993:433ff.; Nølke 1996:63) whereby the speaker organises and presents the different parts of the information conveyed as (s)he chooses.

In order to describe the cohesive case system, I employ the terms ‘background’, ‘foreground’ and ‘focus’ in the manner described below.

The utterance may be divided into background and foreground information. The information of an utterance that does not require any special attention is in the background. Foreground information, on the contrary, consists of all the information of an utterance which requires special attention. The term ‘focus’ is here used in accordance with traditional usage to describe the information presented by the speaker as the foremost relevant information of the utterance. Often (if not always) the focus will appear among the new information of the utterance. Any focused information unit is automatically foreground information. Other kinds of foreground information are represented by the introduction of new discourse referents and by (rapid) topic shift.

Below I shall show how the cohesive case system works with regard to subjects and subject complements. The nouns shown will primarily, but not exclusively, be of the weak declensions (an- and on-stems) as the system was most visible in these paradigms in the mid-1300s.

4. Examples of cohesive case in B 69

As far as I can see, a division between background information and foreground information is the underlying principle behind the distribution of the nominative and the oblique case endings in B 69.

For example, when a weak noun like kuna “woman/wife” is used to introduce a new discourse referent at the opening of the paragraph cited in (3), this is foreground information, and we find it in the nominative case. As the text progresses, kuna becomes background information and may then occur in the oblique case:

(3) Kuna manzs ma æi maeth logum mer a setía af
Woman-fem.nom man’s may not with laws more sell of
bondans bo æn fein penninga mun utan
the.man’s belongings than five penningas’ worth without
bondans with æn wil hun hofilega swa setía bort tha
the.husband’s knowledge but will she often so sell off then
ma hun mykin scatha gora. um hun ær usnial kuna tha
may she great damage do. if she is unwise woman then
Case in Middle Danish

(A man's wife may not legally sell off more of the man's belongings than what amounts to five pennings' worth without his knowledge. But if she persists in doing so, then she may cause great damage. If she is an unwise wife, then the husband must announce at the thing, that his wife does this (...)." (DgL 250, 7–14)

In example (3), we see how at the first occurrence of the word the foreground information is reflected by the use of the nominative, whereas the later occurrence (the background information) allows for the oblique/accusative case.

Another, more complex example is shown in (4):

(4) Thagar granna hafwa sath Seth sina tha scalu the læggia
When neighbours have sown seeds their then shall they set
læghstæfnæ fore alla the i by bo sammen | ath the
deadline-fem.obl for all they in village live together | that they
gierther the alli ath the læghstæfnæ ær fore
must-put-up-fences all by this deadline-fem.obl which fore
lægs. then ær æi gierthær bote ore. Sithæn
lay-pass he who not puts-up-fences pays-a-fine-of 1.øre Then
lægs annur læghstæfnæ oc then ær æi
is-set second-fem.nom deadline-fem.obl and he who not
gierthræ bote twa ora.|| Sithæn lægs
puts-up-fence must-pay-a-fine-of two øre || Then is-set
thrithia læghstæfnæ (...)
third-fem.nom deadline-fem.obl (...)
"When everyone in the community has sown his seeds, then they should all agree on a deadline by which they all must fence their fields. He who does not comply with this must pay a fine of one øre. Then a second deadline is settled, and he who does not comply, pays a fine of two øre. Then a third deadline is settled (...)." (DgL 249, 16–23)

In accordance with the classical case system, it is hardly surprising to see the first occurrence of the word læghstæfnæ "deadline" in the oblique case, as it is the direct object of læggia "lay, fix, set, decide". The second occurrence is also what might be expected as the word is governed by a preposition. However, the third and the fourth occurrences of the word are surprising. In each of these instances the word is now the subject of the sentence, but both times in the accusative/oblique case,
not the nominative, as one might have expected in accordance with the classical case system. Furthermore, the modifiers of the noun, the words annur “second” and thrithia “third”, are both in the nominative. The surprises are thus twofold: the subject is not in the nominative, and there is no agreement between the head and the modifier of the noun phrase.

If we look at these same examples from a cohesive point of view, however, we find that they have certain factors in common. In both cases where laghstæfna is the subject, we are dealing with background information, as the word has already been introduced earlier in the text. The second common factor is found in the modifiers, as these certainly do not consist of background information. Indeed, they both introduce new information into the text, and each time they are the likely focus of the sentence.

The overwhelming number of subject complements in the nominative supports the idea that the nominative is used in foreground information. This is perfectly in line with the prototypical function of these phrases: they are always used to say something about the entity predicated about. In other words they typically consist of new information, and most frequently they are the focus of the sentence. Thus we find very many cases of foreground information in the nominative. Those in (5) illustrate this use:

(5) Wil bonde quíkað oc quítha fulðer i
Will man alive-MASC.NOM and anguish full-MASC.NOM into
monastery go then may he with all his main
lot in fara. warthær han siður tha ma han
possessions in go becomes he ill-MASC.NOM then may he
halfwan gifwa clostær (…) oc eìg mera (…) half
give monastery (…) and not more (…)
“If a man alive and remorseful wishes to join a monastery with all of his main belongings, then he may do so. If he becomes ill, he may only give half of his possessions to the monastery (…)” (DgL 211, 2–5)

In (5) the subject complements are based on adjectives, but in order to show that the distinction foreground vs. background information cuts across traditional word classes, a further example of a subject complement in the nominative is offered in (6). This time the word in question is a noun:

(6) (…) tha fari han a hárræståthing oc siði fore ||
(…) then must-go he to thing and tell to ||
thingtonum ath hin ær thiðfær hans (…)
thingmen that he-DEM.MASC.SING is thief-MASC.NOM his (…)
Then he must go to the thing and announce to the officials, that this person stole from him (…)” (DgL 239, 30–240,1)

The element of intention in the cohesive case system shows itself in various places. The next two examples both show how the boundaries of paragraphs may be overruled if the scribe in question considers these boundaries to be irrelevant.

In a consecutive line of paragraphs concerning the possible damage to fields and crops, one of the later paragraphs begins as shown in (7):

(7) Brytær man up uth gierthe fore hæsti sinum æller fore wagni
breaks man – – fence for horse his or for wagon

sinum. oc worther scatha ofna akrum (…)

his and becomes damage-masc.obl on fields (…)

“If a man breaks a fence for his horse or for his wagon, and if the fields are damaged (…)” (DgL 249, 6–8)

The word scathi “damage” has already been mentioned in preceding paragraphs, and therefore scathi can be in the oblique case here. Thus the scribe may choose to present scathi as background information by putting it in the oblique case.

(8) shows a parallel situation. In a consecutive line of paragraphs concerning adultery and other kinds of illicit sex, the opening sentence of the last of these paragraphs has the subject of the sentence in the oblique case, kunu “woman”:

(8) Ær kunu san-Ø fore hordoms sac (…)
Is woman-fem.obl true-fem.nom for adultery’s sake (…)

“If a woman is found guilty of adultery (…)” (DgL 257, 16–20)

With respect to this suite of paragraphs, the noun kunu as discourse referent has already been established in earlier paragraphs, and hence it may now be perceived as background information and presented as such by the speaker, and consequently be put in the oblique case.

Examples like these with kunu and scatha constitute the primary reason for the notion of intention as being an important element of the system of cohesive case. The speaker (in the case of B 69, the scribe) may decide to present certain information as either background or foreground information, and in this manner the cohesive case system becomes an editing tool for the speaker to use in order to create what he might consider a cohesive text.

These data point to a system of textual or cohesive case, whereby a distinction is made between background and foreground information. The most blatant examples of this system are seen in the examples where the noun phrase is, in fact, divided into two: the modifier as foreground in the nominative case and the head as background in the accusative/oblique case (cf. (4)).
5. Signs of cohesive case in other sources

However, these distributions could very well be dismissed as performance errors were it not for other data from Denmark and from Sweden. In many sources from Danish, especially the eastern parts of the country, we see the same preference for the nominative case in adjectives functioning as subject complements. The following examples are excerpted from the Letter of the Calmar Union 1397 (9) and from the Danish version of the Lucidarius from the late 1400s (10):

(9) *huor han worther a talethir oc a kerther*
where he becomes on spoken-*masc.nom* and indicted-*masc.nom*
ther *scal man over hanom rexe*
there shall man over him do-court
“The case must be served at the location where the charges have been brought” (U 9, 4–5)

(10) *Then deel ther bygdher er han skiptas i trena deelæ*
that part that built-*masc.nom* is he is-divided in three parts
“The inhabited part (of the world) is divided into three parts”
(Luc 241, 17)

As for grammatical subjects, the Swedish version of Själenes Tröst (German ‘Själenes Tourost’) from the 1400s is particularly interesting. Here we find certain evidence pointing to a division similar to the one just demonstrated from the B 69 of the Scanic Law. The purpose of Själenes Tröst is to illustrate the Ten Commandments. As is often the case in this kind of dogmatic mediaeval literature, this is done through small moral tales. A new tale begins regularly every few pages and thus a new discourse referent enters the stage, and this new discourse referent is often in the nominative case whereas further references will be in the accusative. (11) and (12) below show examples of the first introduction of a new discourse referent in the nominative followed by later mention of the same discourse referent in the accusative. In all cases, the word in question functions as the grammatical subject of the sentence. It should be noted that the later occurrence is supplied with the enclitic definite article, which is another indication of material presented as given and thus easily backgrounded:

(11) *Thz war een konungir heeth atus (…)*
It was a king-*masc.nom* named Atus (…)
*Mölarin hafhe ena dottir oc heth pyla, när hänne*
The.miller had a/one daughter and named Pila, near her
*ssof konungen om nattena (…)*
slept king-*masc.acc.def* at nights (…)

"There was a king by the name of Atus (...) The miller had a daughter named Pila, at night the king would sleep by her (...)" (SJT 358, 2–8)

(12) Thz war een höghferdhogir munkir ...

It was a noble-masc.nom monk-masc.nom ...

Then took monk-masc.acc.def a young dove ...

"There was a noble monk (...). Then the monk took a young dove"
(SJT 136, 30–31 + 137, 11)

6. Other changes in Middle Danish

The next task will be to explain how these changes in the Danish case system came about, and to show how they are linked to other changes in contemporary Danish. Due to restrictions of time and space, the treatment of these aspects will unfortunately be more sketchy than they deserve. As a modus operandi, a comparison of Middle Danish will be made with earlier Runic Danish (for lack of a better term) and with much later Modern Danish.

In Modern Danish the grammatical subject is obligatory. In fact, the definition of a sentence in Modern Danish is based on the catactactic relation ('nexus', cf. Jespersen 1923) of the subject and the finite verb. As word order has become a dominant feature of Modern Danish grammar, this obligatory subject is positionally fixed. It must appear as either the first or the third constituent, as illustrated by the examples in (13).

(13) a. hun græd
    she-subj cried

b. derfor græd hun
    therefore cried she-subj

But the word order of Modern Danish is used not only to identifying grammatical functions; it also provides a frame for the information structure of the sentence. In this article I shall concentrate on only a few points. The first concerns the right-hand side of the sentence ('indholdsfeltet', cf. Diderichsen 1946), as the right-hand side of a Modern Danish sentence constitutes a focus domain. The term focus domain signals that the focus of the sentence is to be found by default among the information units within this domain.
The actual focus of the sentence, however, is determined contextually, typically by 'backtracking'. In the first sentence in (14) above, *Ellen havde spist en mad senere*, we do not know if *spist, en mad or senere* is the focus. As soon as the text continues *hun var blevet godt træt af kage*, we discover that it was in fact *en mad* that was the focus of the first sentence, not *spist or senere*. This brings us to the second point of special interest in the matter at hand: In Modern Danish the subject is excluded from this focus domain. This exclusion reflects the fact that, in Modern Danish, the subject is never the focus by default; it can only be made the focus of a sentence by special means (lexically by the use of focus operators, prosodically by heavy stress).

In Runic Danish these features, characteristic of Modern Danish, are different. The grammatical subject is not obligatory, but optional (cf. examples (2b), (2c) above), and when it does appear, it moves about rather freely. This freedom of movement reflects the fact that, with respect to information structure, the subject is a focus candidate on the same terms as all other focus candidates. In other words, not only is the syntactic status of the subject in Runic Danish greatly different from Modern Danish, the status of the subject with regard to information structure also differs radically. As already mentioned, in Modern Danish the subject is never the focus by default. In Runic Danish it is, by contrast, a focus candidate on equal terms with all other focus candidates.

From Runic Danish, the road to Modern Danish goes through Middle Danish, and in Middle Danish we see relicts from Runic Danish as well as previews of the coming attractions of Modern Danish, all functioning in a manner that makes perfect sense to the contemporary language user. The grammatical subject has already changed in several respects. Firstly, it is not quite as optional as in earlier times. Although examples of sentences with no explicit subject can still be found, they are on the decrease as shown in examples (2)–(2c). Another sign of this development is seen in the heavy increase of anaphoric personal pronouns as subjects. As anaphors, these personal pronouns do not convey new information in the sentence, but will typically be used for the continuous identification of discourse referents. The increase of these anaphoric personal pronouns can be seen as a symptom of the changing status of the grammatical subject from optional to obligatory, syntactically speaking. Alongside this change in syntactic status (and perhaps as a result of it), the subject undergoes certain changes with respect to information structure, too. In Runic Danish the subject could easily be the focus of the sentence. In Modern Danish the subject often consists of background information, and as the exclu-
sion from the focus domain signals, it is never the focus by default: only rarely and by special means will it convey focused information. In Middle Danish, the subjects more and more consist of background information (cf. the growing number of anaphoric personal pronouns), and although examples of right-located subjects can still be found (not shown in this article), the right-hand side of the sentence is predominantly reserved for the focusable information of non-finite verbs, subject complements, objects, adverbials, and the like.

All of this evidence points in the same direction. There is a reshuffling in Danish with respect to information structure and grammar, and at the centre of this reshuffling we find the subject.

7. The reinterpretation of the case system in Middle Danish

We can now return to the case systems in Middle Danish. The reshuffling in Danish with respect to information structure and grammar may very well show itself in the case system too. As the nominative case is no longer strictly needed for the identification of subjects (as word order takes care of that), the contemporary speaker may stop associating the nominative with ‘subject’, and instead make new associations along the lines of information structure. This contemporary speaker may notice how the nominative is very often used in foreground information such as adjectival modifiers in NPs and subject complements, and arrive at the conclusion that the nominative case is indeed used as a signal of foreground information. At the same time, the subject itself increasingly consists of background information, and a need to discriminate between two kinds of subjects with regard to the distinction background vs. foreground may be felt. In Middle Danish the (in some respects) redundant case system is a perfect candidate for reinterpretation, and the result is a double content system whereby one expression (nominative markings) is used to convey one of two different meanings: the meaning of the classical case system of grammatical functions etc. and the meaning of the cohesive case system. The following picture attempts to capture the different meanings of the nominative form.

Nominative in the classical case system: subject and subject complement (incl. modifiers).

Nominative in the cohesive case system: foreground information in subjects, subject complements and modifiers.

For some reason or other the cohesive case system did not survive. This might be due to another change in Danish grammar: the distinction of definite vs. indefinite. In Middle Danish we see the first signs of such a distinction between definite and indefinite discourse referents. As the cited passages show, in the Scanic Law
most nouns are not specified with regard to definiteness, but a few times the nouns occur with the addition of the enclitic definite article (cf. bonde-n in (3)), and in later texts this use becomes progressively more common, as does the rise of the indefinite article en "a" (derived from the numeral en "one") (cf. the examples from Själen Tröst (11), (12)).

8. The role played by the change of stress pattern

The change of stress pattern, mentioned at the beginning of this article, is quite compatible with all the other different changes occurring in the reshuffling that took place in Danish. In linguistic structures already under reinterpretation, this change shows itself phonologically when allowed to, i.e. at first by occurrences where no syntactical or textual ambiguities arise from the pronunciation of the weak 'schwa'. Eventually, even the cohesive case system is phased out due to alternative ways of expressing the background-foreground opposition, and the schwa, now familiar to the contemporary language user as the one used in unstressed syllables, takes over.

The outline of these changes illustrates how closely related the different linguistic areas are. In fact, a slight change within one area seems to effectively instigate and support changes in the other areas. It is certainly possible to study just one of these phenomena separately, but in order to fully grasp the overall picture and the mechanisms at play, these phenomena should be understood in relation to each other.

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The development of some Indonesian pronominal systems*

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1. Introduction

This study focuses on pronominal systems in languages spoken in Indonesia and discusses how some of the systems observed today developed from a single system in their parent language, Proto Extra-Formosan. Proto Extra-Formosan is a branch of Austronesian languages, from which all 'Indonesian languages' are considered to have developed. Figure 1 shows some major subgroups in the Austronesian language family.

It should be noted that the term 'Indonesian languages', which is not well defined either genetically or geographically, is used here for convenience to refer to non-Oceanic Extra-Formosan languages spoken outside of the Philippines. The languages examined in this study form part of the Extra-Formosan (also sometimes referred to as 'Malayo-Polynesian') subgroup, as shown with dotted lines in Figure 1. Most of these languages did not have a writing system until recently, and the internal genetic relationship among these languages, including the subgroups shown in Figure 1, still needs detailed examination. This is mainly because considerable diversity is found in the languages, with genetically inherited features having been modified or replaced by innovated features. The difficulty of morphosyntactic comparison here, therefore, is that the genetically inherited features somehow have to be distinguished from the innovated ones, while we do not know the internal genetic relationship well enough to be able to depend on to work it out.

Various pronominal systems are found in Indonesian languages, with some showing an ergative pattern, some an accusative pattern, as well as various split patterns, and having one, two, or more sets of clitic pronouns, or none. To clarify how these pronominal systems have developed, this study applies a method where...
typological comparison and lexical comparison are integrated. That is, the basic sentence structures of each language are described according to some procedures specifically set up for the purpose of historical comparison. The sentence structures and pronominal forms are then compared, first, internally, then with those reconstructed for Proto Extra-Formosan. It will be shown that a comparison of sentence structures with pronominal forms enables us to clearly identify ‘cognate structures’ – that is, the sentence structures that have developed from the same proto-structure – and thus to reconstruct proto structures. Scenarios as to how three different pronominal systems in Indonesian have developed are illustrated.

By applying this method, it will be shown in this study that the languages having what will be referred to as a ‘two-transitive system’ retain the three different
sentence structures that have been reconstructed for Proto Extra-Formosan, while those with a 'single-transitive system' have simplified the system in one way or another. Hence, the former are considered to be syntactically more conservative than the others. It will be also shown that, in the development of the 'two-transitive systems', the pronominal position preceding the main verb was gained as a result of fronting, rather than by the process of 'auxiliary axing' suggested by Starosta, Pawley & Reid (1981).

It should be noted that there are pronominal systems observed in Indonesian languages other than those referred to in this study. Although they do not appear to clearly fit into the three systems examined in this study, some of them, for example, the 'split intransitive' system in Tukang Besi (cf. Donohue 1994, 1996) and the 'ergative' system in Embaloh (cf. Adelaar 1995), can be explained as retaining a system observed in an intermediate stage. Others, such as the one in Kambera (cf. Klamer 1997, 2000) reflect changes that took place subsequent to those proposed in this study. Details of such changes will be discussed in a separate paper.

2. Basic sentence structures in some Indonesian languages: A description

To understand the various pronominal systems in Indonesian languages, it is necessary to describe first, the basic sentence structures, then to examine the alignment (or the occurrence pattern) of pronominal forms. In this section, a description mainly focusing on the sentence structures will be provided, where particular attention is paid to two typological features: i) the number of transitive sentence structures in each language, and ii) the relative position of the pronominal forms for semantic actor and undergoer in the transitive sentence(s). The languages are classified into two, one with two transitive sentence structures and the other with only one transitive sentence structure. The latter is further classified into those with an accusative-pattern system and those with an ergative-pattern system, depending on the pronominal alignment.

It should be noted that the purpose of this classification is for historical comparison, and some special procedures are applied in the examination and description of their typological features to serve for this specific purpose. For example, the term 'pronominal form' is used here rather loosely, to refer to both agreement markers, clitic pronouns and pronouns. Also, in the description of basic sentence structures, only unmarked structures are examined. For example, the word order where a noun phrase is fronted for the purpose of topicalisation, is not examined at this stage.
2.1 ‘Two-transitive’ system

In some Indonesian languages, two transitive sentence structures are identifiable, and such a system is referred to here as a two-transitive system. The sentence structures are schematically shown in (1) followed by explanation.

(1) ‘Two-transitive’ system (schematic)

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Actor/Undergoer</td>
</tr>
<tr>
<td>Transitive 1</td>
<td>N</td>
<td>V</td>
</tr>
<tr>
<td>(‘AV’ )</td>
<td>Actor</td>
<td>+trns Undergoer</td>
</tr>
<tr>
<td>Transitive 2</td>
<td>N</td>
<td>V</td>
</tr>
<tr>
<td>(‘OV’ )</td>
<td>Undergoer</td>
<td>+trns Actor</td>
</tr>
</tbody>
</table>

In this system, the relative positions of the semantic actor and semantic undergoer alternate between the two transitive structures, which are often referred to as ‘agentive voice (AV)’ and ‘objective voice (OV)’ in descriptions. In (1), the semantic actor precedes the undergoer in Transitive 1, while the undergoer precedes the semantic actor in Transitive 2.

The occurrence of the pronouns in this system has the pattern shown in (2). The symbols ‘N₁’ and ‘N₂’ in (2) indicate where two different sets of pronouns occur in a sentence. N₁ is often an independent pronoun but may be clitic, while N₂ is often clitic but may be an independent pronoun. The symbol ‘=’ indicates the boundary between a clitic pronoun and its host verb. The N₂ in Transitive 2 sometimes precedes the main verb in some languages.

(2) Pronoun alignment in two-transitive system (schematic)

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>N₁</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Actor/Undergoer</td>
</tr>
<tr>
<td>Transitive 1</td>
<td>N₁</td>
<td>V</td>
</tr>
<tr>
<td>(‘AV’ )</td>
<td>Actor</td>
<td>+trns Undergoer</td>
</tr>
<tr>
<td>Transitive 2</td>
<td>N₁</td>
<td>V</td>
</tr>
<tr>
<td></td>
<td>=N₂</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undergoer</td>
<td>+trns</td>
</tr>
</tbody>
</table>

Languages that show the two-transitive pattern include Balinese, Indonesian, Karo Batak, Mori, and Pendau. Example sentences illustrating the two transitive structures and the singular N₁ and N₂ pronominal forms are given from Pendau in (3) where third person pronominal forms are indicated in bold. It can be seen that the form (o)nyo occurs to indicate the third person singular actor in Transitive 2, and the form io elsewhere. A list of Pendau singular pronoun forms follows in (4).
The development of some Indonesian pronominal systems

(3) Pendau (Sulawesi) – Sentences illustrating two different transitive structures with pronominal forms

   Intransitive
   a. …io ne-te-sir ma‘o…
      3SG look go
      “(and) he looked…” (Quick 1994:473)

   Transitive 1
      3SG leave 1SG
      “He left me.” (Quick 1994:467)

   Transitive 2
   c. ?a?u ni-ebiling =onyo.
      1SG leave =3SG
      “He left me.” (Quick 1994:467)

   Transitive 2
   d. Io ni-ebiling =olu.
      3SG leave =1SG
      “I left him.” (Quick 1994:467)

(4) Pendau – Pronominal forms (Quick 1994:466)

\[
\begin{array}{ccc}
1SG & 2SG & 3SG \\
N_1 & ?a?u & oo & io \\
N_2 & ='u & =mu & =nyo \\
\end{array}
\]

In some languages, the occurrence of clitic pronouns is limited to certain person and numbers, thus showing a modified system. For example, in Balinese, both \(N_1\) and \(N_2\) are usually expressed with independent (full) pronouns, and third person singular \(N_2\) may be expressed by a clitic pronoun \(=(n)a\). Sentence (5a) has a first person singular actor which is expressed by the full pronoun \textit{cang}, while a third person singular actor in the same structure is expressed by a clitic pronoun in (5b).

(5) Balinese (Bali) – Sentences illustrating two-transitive system

   Transitive 2
   a. Celeng-e ento beli \textit{cang}.
      pig.DEF that buy 1SG
      “I bought the pig.” (Arka 1998:63)

   Transitive 2
   b. Nyoman baang \(=a\) pipis.
      Nyoman give \(=3SG\) money
Thus, the pronominal forms in Balinese can be summarised as in (6).

(6) Balinese – Pronominal forms (Arka 1998)

\[
\begin{array}{ccc}
\text{1sg} & \text{2sg} & \text{3sg} \\
\text{N}_1, \text{N}_2 & \text{cang} & \text{cai} & \text{ia} \\
\text{=N}_2 & \text{=} & \text{=} & \text{=(n)\text{a}}
\end{array}
\]

2.2 ‘Single-transitive’ systems: ‘Accusative-pattern’ and ‘Ergative-pattern’ systems

Some languages do not have the kind of structure where the undergoer precedes the main verb and the actor like the Transitive 2 structure of the two-transitive system. These languages are referred to in this study as having a ‘single-transitive’ system. The sentence structures of the single-transitive system are schematically shown in (7).

(7) Single-transitive system (schematic)

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V (=) N</th>
</tr>
</thead>
<tbody>
<tr>
<td>–trns</td>
<td>Actor/Undergoer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transitive</th>
<th>N(=) V (=) N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>+trns</td>
</tr>
<tr>
<td>Undergoer</td>
<td></td>
</tr>
</tbody>
</table>

As in the two-transitive system, in some languages with a single-transitive system, the sole argument of the intransitive sentence follows, instead of preceding the main verb.

Some languages with this system, such as Kéo, have only one set of pronouns and do not have clitic pronouns nor agreement markers on the verb. The independent pronouns occur in all the three N positions, as shown in (8), and in this system, it is only word order that distinguishes the semantic actor from the undergoer. The Kéo pronoun forms are listed in (9).

(8) Kéo – Pronoun system (based on Baird 2000)

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>N V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor/Undergoer</td>
<td>–trns</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transitive</th>
<th>N V N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>+trns</td>
</tr>
<tr>
<td>Undergoer</td>
<td></td>
</tr>
</tbody>
</table>

(9) Kéo – Pronominal forms (based on Baird 2000)

<table>
<thead>
<tr>
<th>1sg 2sg 3sg</th>
</tr>
</thead>
<tbody>
<tr>
<td>N dəɾəʔu kau ðimu</td>
</tr>
</tbody>
</table>
Most of the other languages with a 'single-transitive' system, however, like languages with the two-transitive system, have more than a single pronominal set. Two different patterns are observed in the alignment of the pronoun sets in this system; that is, the sole argument in intransitive sentences is indicated by either the set used for the semantic actor, or those used for the undergoer in transitive constructions. These two different patterns are referred to in this study as accusative-pattern and ergative-pattern systems. The system with the accusative-pattern is schematically shown in (10), where the positions for two pronominal sets are distinguished by the subscripts 'X' and 'Y'. In (10), a set of pronouns (NX) is used both to indicate the sole argument in intransitive sentences as well as the actor of transitive sentences. The system with the ergative-pattern is schematically shown in (11), where a set of pronouns (NX) is used both to indicate the sole argument in intransitive sentences and the undergoer of transitive sentences.

(10) Single-transitive system with an 'Accusative-pattern' pronominal system

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>NX</th>
<th>Actor/Undergoer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitive</td>
<td>NX</td>
<td>V</td>
<td>NY</td>
</tr>
<tr>
<td>Actor</td>
<td>+trns</td>
<td>Undergoer</td>
<td></td>
</tr>
</tbody>
</table>

(11) Single-transitive system with an 'Ergative-pattern' pronominal system

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>NX</th>
<th>Actor/Undergoer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitive</td>
<td>NY</td>
<td>V</td>
<td>NX</td>
</tr>
<tr>
<td>Actor</td>
<td>+trns</td>
<td>Undergoer</td>
<td></td>
</tr>
</tbody>
</table>

As the pronominal forms in two-transitive structures could be either full pronouns or clitic pronouns, each pronominal form occurring in these single-transitive systems may be either a full pronoun, a clitic pronoun, or an agreement marking form, depending on the language. When a form occurs as an agreement marking form, a corresponding full pronoun may occur in addition to, or alternating with the shorter form.

Languages with the accusative-pattern system include Tetun (Timor), Dawanese (Timor), archaic structures of Buru (Buru), and Roti (Dobel). Examples are shown in (12) from Tetun, followed by a list of the pronominal forms in (13). In (12a) and (12b), subject agreement markers n- and k- are observed occurring in position NX. Sentence (12c) is an example where full pronouns occur.
(12) Tetun (the Fehan dialect) – Sentences illustrating an accusative-pattern system

a. N-ák "Ó, k-ărè tiʔan."
   3sg-say oh 1sg-see already
   "(He) said ‘Oh, (I) have seen (it).’"

b. Nia n-alai tiʔan.
   3sg 3sg-run already
   “She has run away.” (van Klinken 1999:179)

c. Tán nia n-akklelek haʔu, foin haʔu fota nia.
   because 3sg 3sg-speak.abuse 1sg then 1sg hit 3sg
   “Because she verbally abused me, then I hit her.”
   (van Klinken 1999:179)

(13) Tetun – Pronouns and agreement marking forms (van Klinken 1999)

NX, NY (full pronoun) haʔu ő nia
NX- ('subject agreement markers') k- m- n-

Languages with the ergative-pattern system include Bugis (Sulawesi), Makasarese (Sulawesi) and Uma (Sulawesi). Examples showing this system are provided in (14) from Uma, the pronominal forms of which are shown in (15). It can be seen that the form ku- is used to express the agent of a transitive sentence, while the form -a is used elsewhere.

(14) Uma – Sentences illustrating an ergative-pattern system
(cf. Himmelmann 1996:117)

a. Mo.keno-a
   INT.run-1sg
   “I am running.”

   3sg-hit-1sg
   “He hits me.”

c. Ku-koni' loka'-na.
   1sg-eat banana-3sg.poss
   “I eat her/his/its bananas.”

(15) Uma – Agreement marking forms (based on Himmelmann 1996:116)

1sg 2sg 3sg
NX -a -ko -i
NY ku- na- na-
3. A comparison of Indonesian pronominal systems and forms

In this section, the pronominal forms occurring in each sentence structure described in the previous section are examined and summarised. It will be shown that the reflex sets of the Proto Extra-Formosan Genitive pronoun set (which indicated Ergative) are usually identifiable in Indonesian languages, and this provides a key for postulating possible cognate structures.

The two- and single-transitive systems, are shown together in (16).

(16) A simple typological comparison of the sentence structures in two- and single-transitive systems

<table>
<thead>
<tr>
<th>'Two-transitive'</th>
<th>'Single-transitive'</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intransitive</strong></td>
<td></td>
</tr>
<tr>
<td>(Ta) V (\rightarrow\text{trns}) N Actor/Undergoer</td>
<td></td>
</tr>
<tr>
<td><strong>Transitive 1</strong></td>
<td></td>
</tr>
<tr>
<td>(Tb) N (\rightarrow\text{trns}) V N Actor/Undergoer</td>
<td></td>
</tr>
<tr>
<td><strong>Transitive 2</strong></td>
<td></td>
</tr>
<tr>
<td>(Tc) N (\rightarrow\text{trns}) V N Actor/Undergoer</td>
<td></td>
</tr>
</tbody>
</table>

A simple typological comparison of the sentence structures in Indonesian languages might lead us to conclude that the transitive 1 structure in a two-transitive system (Sentence (Tb) in (16)) corresponds to the transitive structure in a single-transitive system ((Sb) in (16)), because of the word order correspondence. Such a conclusion would further imply that the Transitive 2 structure in the two-transitive system is either an innovation, or a retention that has been lost in the single-transitive system. However, an examination of the position of cognate pronominal forms reveals a different story.

In Indonesian languages, despite the divergence found in both the forms of pronouns and their occurrence patterns, the reflexes of the Proto Extra-Formosan Genitive clitic pronouns are often identifiable, as will be shown in 3.1. I consider that these reflexes of earlier clitic forms play a key role in the comparison of the Indonesian sentence structures, as will be discussed in details in 3.2. There, cognate structures are determined through a comparison of the positions where these key forms occur in each sentence structure.
3.1 Proto Extra-Formosan Genitive pronouns and Indonesian pronominal forms

Some pronominal forms, along with their functions, have been reconstructed for Proto Austronesian, a parent language of Proto Extra Formosan. One of such reconstructions is shown in (17).

(17) Proto Austronesian – Some reconstructed pronominal forms
(Blust 1977:10–11) 10

<table>
<thead>
<tr>
<th></th>
<th>1SG</th>
<th>2SG</th>
<th>3SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative11</td>
<td>*i-aku</td>
<td>*i-Su</td>
<td>*Si-ia</td>
</tr>
<tr>
<td></td>
<td>*(i)kaSu (polite)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genitive (Ergative) clitic12</td>
<td>*(n)i-ku</td>
<td>*(n)i-Su</td>
<td>*(n)i-a</td>
</tr>
<tr>
<td></td>
<td>*(n)i-mu (polite)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Extra-Formosan languages, the Proto Austronesian Genitive pronominal forms are usually well retained and their reflexes are often recognisable. A reflex of the earlier first person singular form usually contains either $k$ or $\eta$, one of the second person either $m$ or $n$, and the third person $n$ or $\dot{n}$. This is summarised in (18).

(18) Consonants that occur in reflexes of Proto Austronesian Genitive clitic pronouns

<table>
<thead>
<tr>
<th></th>
<th>1(SG)</th>
<th>2(SG)</th>
<th>3(SG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$k$</td>
<td>$m$</td>
<td>$n$</td>
<td></td>
</tr>
<tr>
<td>$\eta$</td>
<td>$n$</td>
<td>$\dot{n}$</td>
<td></td>
</tr>
</tbody>
</table>

This is reflected in reconstructions of the pronominal sets of some daughter proto languages of Proto Extra-Formosan. Some reconstructed pronominal forms are provided in (19), where the reflexes of the earlier Genitive clitic pronouns are printed in bold.

(19) Consonants that occur in reflexes of Proto Austronesian Genitive clitic pronouns


<table>
<thead>
<tr>
<th></th>
<th>1SG</th>
<th>2SG</th>
<th>3SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent</td>
<td>*aku</td>
<td>*kau(?)</td>
<td>*ia</td>
</tr>
<tr>
<td>Agent</td>
<td>*-ku-</td>
<td>(n/d)</td>
<td>(n/d)</td>
</tr>
<tr>
<td>Possessive or object</td>
<td>*-ku</td>
<td>*-mu(?)</td>
<td>*-na</td>
</tr>
</tbody>
</table>
The development of some Indonesian pronominal systems

b. Proto South Sulawesi pronouns (Mills 1975)

\[
\begin{array}{ccc}
1sg & 2sg & 3sg \\
\text{Independent} & *(i)aku & *(i)-ko & *(i)-ia \\
\text{Ergative clitic} & *ku- & *mu-, *nu- & *-na \\
\text{Genitive (possessive)} & *-(ŋ)ku & *-mu, *-nu & *-na \\
\text{Nominative clitic} & *-ak & *-ko & *-i \\
\end{array}
\]

c. Proto Bungku-Tolaki pronouns (E. Sulawesi, Mead 1998:122–154)

\[
\begin{array}{ccc}
1sg & 2sg & 3sg \\
\text{Independent (basic)} & *in-aku & *in-ko & *hia \\
\text{Independent (emphatic)} & *o-ŋku-de & *o-mu-de & *o-na-de \\
\text{Genitive/Ergative clitic} & *-ŋku, *-ku & *-mu, *-u & *-no \\
\text{Nominative clitic} & *ku & *u & *i \\
\text{Absolutive} & *aku & *ko & *io \\
\end{array}
\]

d. A set of Proto Central-Eastern Malayo-Polynesian pronouns (Blust 1993:258–259, based on Stresemann 1927)

\[
\begin{array}{ccc}
1sg & 2sg & 3sg \\
\text{(Subject) proclitics} & *ku- & *mu- & *na- \\
\end{array}
\]

e. Proto Oceanic pronouns (Evans 1995; Lynch, Ross, & Crowley 2002)

\[
\begin{array}{ccc}
1sg & 2sg & 3sg \\
\text{Independent} & *[i]au & *[i]ko[e] & *ia \\
\text{Subject enclitic Set I} & *au= & *ko= & *i= \\
\text{Set II} & *ku= & *mu= & *(y)a=, *ñ= \\
\text{Set III} & *[y]a= & *o- & *e- \\
\text{Object enclitic} & *=au & *=ko & *=a \\
\text{Possessor suffix} & *-gu & *-mu & *-ña \\
\end{array}
\]

f. Proto Central Pacific pronouns (Kikusawa 2002:147)

\[
\begin{array}{ccc}
1sg & 2sg & 3sg \\
\text{Independent} & *aku & *ikoe & *ia \\
\text{Genitive/Ergative clitic} & *=ŋku & *=mu & *=ña \\
\text{Nominative clitic} & *=au & *=koe & *=a, Ø \\
\end{array}
\]

In this study, when a set of pronouns consists of first, second and third person (singular, when there is number distinction) pronoun each containing the appropriate reflex of the consonants shown in (18), the set is identified as a ‘reflex set’ of the earlier Genitive pronoun set. Although the Genitive pronoun set is considered to have retained its morphosyntactic function at least until Proto Polynesian (Kikusawa 2002:130–137, see Figure 1), some languages, after they split off, have undergone subsequent innovations resulting in different morphosyntactic alignments. In such languages, the reflex set of the earlier Genitive pronouns can still
be identified but with different morphosyntactic functions. This can be observed in, for example, Tetun, in which the set has been grammaticalised to be 'subject agreement markers' (thus marking the 'Nominative' of an accusative system), as in (20). As a result of the grammaticalisation, it is only the initial consonant of each earlier form that is retained today, but they are still recognisable as reflexes of those given in (18).

(20) Tetun (West Timor) agreement markers and pronominal forms

<table>
<thead>
<tr>
<th></th>
<th>1SG</th>
<th>2SG</th>
<th>3SG</th>
<th>1EXPL</th>
<th>1INPL</th>
<th>2PL</th>
<th>3PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject agreement markers</td>
<td>k-</td>
<td>m-</td>
<td>n-</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>r-</td>
</tr>
</tbody>
</table>

Similarly, what have been described as 'Genitive' and 'Nominative' pronoun sets in Kambera (Klamer 1998 and others) are also clearly reflexes of earlier Genitive pronouns. This is shown in (21), where the sources of pronouns are indicated with the symbol ‘α’ for the earlier Nominative and with ‘β’ for the earlier Genitive.

(21) Kambera pronominal forms

(22) Uma system shows two apparent reflex sets of the earlier Genitive set. Morphological differentiation has resulted in a distinction between Genitive and Ergative sets, with each set now occurring in a different position relative to its head.

The Uma system (22) shows two apparent reflex sets of the earlier Genitive set. Morphological differentiation has resulted in a distinction between Genitive and Ergative sets, with each set now occurring in a different position relative to its head.
(22) Uma (West Central Sulawesi) pronouns (Martens 1995)

<table>
<thead>
<tr>
<th></th>
<th>1SG</th>
<th>2SG</th>
<th>3SG</th>
<th>1EXPL</th>
<th>1INPL</th>
<th>2PL</th>
<th>3PL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLITIC PRONOUNS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genitive</td>
<td>-ku</td>
<td>-nu</td>
<td>-na</td>
<td>-kai</td>
<td>-ta</td>
<td>-ni</td>
<td>-ra</td>
</tr>
<tr>
<td>Ergative</td>
<td>ku-</td>
<td>nu-</td>
<td>na-</td>
<td>ki-</td>
<td>ta-</td>
<td>ni-</td>
<td>ra-</td>
</tr>
<tr>
<td>Absolutive</td>
<td>-a</td>
<td>-ko</td>
<td>-i</td>
<td>-kai</td>
<td>-ta</td>
<td>-ki</td>
<td>-ra</td>
</tr>
</tbody>
</table>

A reflex set must be determined based on the forms of all three persons, because it is possible that a single form or two in a set may contain the ‘right’ consonant but be from a different source. For example, the first person singular reflex of the earlier Nominative pronoun may start with a reflex of *k as a result of the loss of the initial vowel. In this case, however, it is unlikely that the second and third person pronouns would contain a ‘right’ consonant. Likewise, the reflex of both/either the second and/or third person may start with the consonant *n, having a source in some form other than a Genitive pronoun, such as an earlier Determiner *na, or *ni.

3.2 Internal morphosyntactic comparison

It was shown in the previous section that the reflex set(s) of the Proto Extra Formosan Genitive pronoun set are often identifiable in a daughter language. Proto Extra-Formosan Genitive pronouns are reconstructable as clitics (Reid p.c.), and therefore, it is safe to assume that their position in relation to the verb in each sentence structure was retained to some extent. A close examination of the occurrence patterns of pronouns not only proves this, but also shows that these reflex sets can be used to determine cognate structures.

But first, the forms of pronouns and agreement markers in some Indonesian languages are summarised in (23) through (25), along with the basic sentence structures of each system described in Section 2.

In (23), the forms of pronouns in languages with a two-transitive system are provided. It can be seen in the table that reflexes of the Proto Extra-Formosan Genitive pronouns constantly occur in N2, which is the actor of Transitive 2 sentences.
Pronominal/agreement forms in two-transitive systems

<table>
<thead>
<tr>
<th>Language</th>
<th>N₁</th>
<th></th>
<th>N₂</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1(sg)</td>
<td>2(sg)</td>
<td>3(sg)</td>
<td>1(sg)</td>
</tr>
<tr>
<td>Mori</td>
<td>aku</td>
<td>iko</td>
<td>ta</td>
<td>=ku</td>
</tr>
<tr>
<td></td>
<td>=ak =ko</td>
<td>=o</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ku=</td>
<td>= =</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pendau</td>
<td>?aʔu</td>
<td>oo</td>
<td>io</td>
<td>=ʔu</td>
</tr>
<tr>
<td></td>
<td>=u=</td>
<td>mu=</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Konjo     | -a | -ko | -ki | k= | nu- | na-
| Balinese  | cang | cai | ia | (n) | | |
| Karo Batak | aku | kam/ | ia | ku= | =ndu/ | -na
|           | ᵃko | = | ko/ | =mu | | |

Sources: Balinese (Arka 1998); Konjo (Frøberg 1991); Mori (Rasel 1994); Pendau (Quick 1994); Totoši (based on Himmelmann 1996).

The pronominal forms in languages with the accusative-pattern system are provided in (24). It is shown in the table that the reflexes of Proto Extra-Formosan Genitive pronouns occur in Nₓ, that is the ‘subject’.
(24) Pronominal/agreement forms in accusative-pattern systems

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>N_X</th>
<th>N_Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-trns</td>
<td>Actor/Undergoer</td>
<td></td>
</tr>
<tr>
<td>Transitive</td>
<td>N_X</td>
<td>V</td>
<td>N_Y</td>
</tr>
<tr>
<td></td>
<td>Actor</td>
<td>+trns</td>
<td>Undergoer</td>
</tr>
</tbody>
</table>

Language | N_X | N_Y |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dawanese</td>
<td>i(u)-</td>
<td>m(u)-</td>
</tr>
<tr>
<td>Roti</td>
<td>a-</td>
<td>m(u)-</td>
</tr>
<tr>
<td></td>
<td>(u)-</td>
<td>m(u)-</td>
</tr>
<tr>
<td>Tetun</td>
<td>k-</td>
<td>m-</td>
</tr>
</tbody>
</table>

Sources: Dawanese (Steinhauer 1993); Roti (Fox and Grimes 1993); Tetun (van Klinken 1999).

In (25), it can be seen that in languages with the ergative-pattern system, the reflexes of earlier Genitive pronouns occur in N_Y, that is the Agent of transitive constructions.

(25) Pronominal/agreement forms in ergative-pattern systems

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>N_X</th>
<th>N_Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-trns</td>
<td>Actor/undergoer</td>
<td></td>
</tr>
<tr>
<td>Transitive</td>
<td>N_Y</td>
<td>V</td>
<td>N_X</td>
</tr>
<tr>
<td></td>
<td>Actor</td>
<td>+trns</td>
<td>Undergoer</td>
</tr>
</tbody>
</table>

Language | N_X | N_Y |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bugis</td>
<td>-ka?</td>
<td>-i</td>
</tr>
<tr>
<td>Uma</td>
<td>-a</td>
<td>-ko</td>
</tr>
</tbody>
</table>

Sources: Bugis (Friberg 1991); Uma (Himmelman 1996).

The above are summarised in (26), where the positions in which the reflexes of earlier Genitive pronouns occur are indicated by the symbol 'β'.

(26) Pronominal/agreement forms in ergative-pattern systems

<table>
<thead>
<tr>
<th>Intransitive</th>
<th>V</th>
<th>N_X</th>
<th>N_Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-trns</td>
<td>Actor/undergoer</td>
<td></td>
</tr>
<tr>
<td>Transitive</td>
<td>N_Y</td>
<td>V</td>
<td>N_X</td>
</tr>
<tr>
<td></td>
<td>Actor</td>
<td>+trns</td>
<td>Undergoer</td>
</tr>
</tbody>
</table>

Language | N_X | N_Y |
<table>
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<tbody>
<tr>
<td>Bugis</td>
<td>-ka?</td>
<td>-i</td>
</tr>
<tr>
<td>Uma</td>
<td>-a</td>
<td>-ko</td>
</tr>
</tbody>
</table>
In (26), it can be seen that in Transitive 2 in the two-transitive system (Tt2) and the Transitive sentences in the single-transitive systems (At and Et), the semantic actor is constantly expressed by a reflex of the earlier Genitive pronoun ($\beta$).\textsuperscript{15} It should be also noted that, in (23) to (25), it can be seen that the forms that occur in non-$\beta$ positions are more or less 'similar', although their cognacy is not as clear as those in the $\beta$ positions.

Based on the above facts, the following claims about the historical development of the Indonesian pronominal systems that have been examined can be made:

1. Transitive 2 in the two-transitive system and the transitive structures in the accusative- and ergative-pattern systems appear to be cognate structures. Thus a transitive structure with the semantic actor being expressed with the earlier Genitive pronoun set is likely to be reconstructible for the parent language.
2. The intransitive structure in the two-transitive system and that in the ergative-pattern system appear to be cognate structures.

These claims require explanation of at least the following questions:

a. What is the origin of the Transitive 1 structure in the two-transitive system?

b. What is the explanation for the reflexes of earlier Genitive pronouns occurring in the intransitive structure in accusative-pattern systems?

c. How is the word order difference in the reflex structures of the earlier transitive structure accounted for?

In the next section, where external witnesses are provided, these claims and questions are examined in the light of changes from Proto Extra-Formosan. It will be confirmed that the claims (1) and (2) are in fact correct, and the answers to the questions (a) to (c) are provided.
4. A comparison with the Proto Extra-Formosan System

In this section, the three Indonesian systems, including their β positions, are compared with the basic sentence structures reconstructable for Proto Extra-Formosan. Through this external comparison, claims (1) and (2) proposed in the previous section are confirmed, and the way the three systems developed from that reconstructed for Proto Extra-Formosan is illustrated. Historical explanations for the situation questioned in (a) to (c) are also provided.

4.1 Proto Extra-Formosan sentence structures

Sentence structures of Proto Extra-Formosan are considered to have been similar to those found in the Philippine languages today. Sentence structures reconstructable for Proto Extra-Formosan (based on Starosta, Pawley, & Reid 1981 and Reid p.c.) are presented in (27) and (28). The position of the Genitive clitic pronoun is again indicated by the symbol ‘β’. Starosta, Pawley, & Reid (1981) and Reid (p.c.) consider that, in Proto Extra-Formosan, a clitic pronoun was cliticised to the sentence initial verb, that is to the auxiliary verb when there was one as in (27), otherwise to the main verb as in (28).

(27) Proto Extra-Formosan – Reconstructed sentence structures with auxiliary verbs

a. Intransitive 1
   V=N V
   Aux=Nom -trns

b. Intransitive 2
   V=N V NP
   Aux=Nom -trns Loc

   (‘AF’)

   c. Transitive
      V=β V N
      Aux=Gen +trns Nom
      (‘GF/LF/BF/IF’)

(28) Proto Extra-Formosan – Reconstructed sentence structures without auxiliary verbs

a. Intransitive 1
   V=N
   -trns=Nom

b. Intransitive 2
   V=N NP
   -trns=Nom Loc
      (‘AF’)

c. Transitive
   V=β N
   +trns=Gen Nom
      (‘GF/LF/BF/IF’)
It should be noted that two intransitive sentences are reconstructible for Proto Extra-Formosan, based on the two intransitive sentence structures typically found in Philippine (and Formosan) languages; that is, a single complement intransitive sentence structure (27a) and (28a) and another where a second complement noun phrase (which was case marked as either Genitive or Locative) was required (27b) and (28b). 16

4.2 Proto Extra-Formosan and Indonesian sentence structures: A comparison

A comparison of the occurrence patterns of pronominal forms in the three systems with that in Proto Extra-Formosan confirms claim 1) in §3.2.

The reconstructed sentences structures for Proto Extra-Formosan and those of the three Indonesian systems are shown together in (29).

(29) Proto Extra-Formosan sentence structures and those in two Indonesian systems

<table>
<thead>
<tr>
<th>Proto Extra-Formosan</th>
<th>Two-transitive</th>
<th>Ergative-pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intransitive 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aux/N V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor/Undergoer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intransitive 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aux/N V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor/Undergoer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transitive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aux=β V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor/Undergoer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intransitive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V =β N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergoer +trans Actor</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intransitive 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N V =β N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor/Undergoer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transitive 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N V =β N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergoer +trans Actor</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intransitive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V =β N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor/Undergoer</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transitive 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V =β N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actor/Undergoer</td>
<td></td>
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</tr>
</tbody>
</table>

The transitive 2 structure in the two-transitive system, and the transitive structures in accusative- and ergative-pattern systems all reflect the features of the transitive sentence in Proto Extra-Formosan, in that the semantic actor is expressed by the reflexes of the Proto Extra-Formosan Genitive clitic pronouns. A comparison of
verb forms and their semantic features occurring in each structure further confirms the cognacy of these sentence structures, although details are not discussed in this study.\textsuperscript{17} Thus, the structural correspondence between Proto Extra-Formosan, and the Indonesian two-transitive, ergative-pattern, and accusative-pattern systems can be determined as shown in (30).

(30) Cognate structures and their parent structures in the three Indonesian systems

\[ \begin{array}{cccc}
\text{Proto Extra-} & \text{Two-transitive} & \text{Ergative-pattern} & \text{Accusative-pattern} \\
\text{Formosan system} & \text{system} & \text{system} & \text{system} \\
\text{Intransitive 1} & \text{Intransitive} & \text{Intransitive} & ? \\
\text{Intransitive 2} & \text{Transitive 1} & ? \\
\text{Transitive} & \text{Transitive 2} & \text{Transitive} & \text{Transitive} \\
\end{array} \]

Transitive 2 in the two-transitive system is the reflex of the Transitive structure in Proto Extra-Formosan. In both structures, the $\beta$ position indicating the semantic actor occurs immediately either preceding or following the verb. This further implies that i) the Transitive 1 structure in the two-transitive system is the reflex of the Intransitive 2 structure in Proto Extra-Formosan. The Intransitive structure in the two-transitive system must be a reflex structure of Intransitive 1 in Proto Extra-Formosan, while the intransitive structure in the ergative-pattern system may include reflexes of both Intransitive 1 and Intransitive 2. The origin of the intransitive structure in the accusative-pattern system, however, is still unanswered, and possible explanations appear in the next section.

4.3 Development of an Accusative-pattern system

With the given information, at least two different explanations are possible for the source of the earlier Genitive clitic pronominal forms occurring in the ‘subject’ position in intransitive sentences in the accusative-pattern system. They are presented below:

i. The pronominal forms in intransitive sentences were replaced by earlier Genitive forms ($\beta$), as they have been in some Oceanic languages.

ii. The intransitive structures developed from the earlier transitive structure. Subsequently, the earlier intransitive structures were lost.

Among these, only the first will be illustrated in this paper.

Figure 2 illustrates an ergative to accusative change that is considered to have taken place in some Oceanic languages (Kikusawa 2002:128). As is shown in the figure, the pronouns in an earlier system show an ergative pattern where there is
a morphological contrast between Nominative and Genitive (β), the latter indicating the actor of transitive sentences. However, in some languages, the earlier Genitive set replaced the Nominative set in intransitive sentences to become ‘subject’ pronouns, and in others, the earlier Nominative set replaced the Genitive set in transitive sentences to become ‘subject’ pronouns. This change was motivated probably by the fact that a clear position contrast, namely, the position preceding the main verb and the one following it, was established as the auxiliary verb became optional. The result was that the marking by position contrast eventually took over the earlier morphological marking.

The same process may well have taken place in the Indonesian languages which show the accusative-pattern system today. The fact that the earlier clitic pronouns developed into agreement marking forms occurring in the verb initial position in some Indonesian languages, such as Tetun (cf. example (12)), supports the claim that the ‘subject’ acquired a fixed position in relation to the main verb at a relatively early stage. On the other hand, in some languages, forms that express the ‘subject’ of intransitive sentences may include reflexes of earlier Genitive clitic pronouns under some conditions. In Bugis, for example, although its basic pronominal occurrence is an ergative-pattern, an ‘ergative-marking’ clitic pronoun may occur in intransitive sentences when a “fronted word (such as the standard negator de?) cannot readily take the absolutive suffix [=pronominal form]” (Abas & Grimes 1995:555). Intransitive sentences in Bugis with sole arguments expressed by nom-
The development of some Indonesian pronominal systems

inative and ergative pronouns are shown in (31). Such situations may imply a way through which the ‘β’ set replaced the sole argument in intransitive sentences.

(31) Bugis (Sulawesi) – Intransitive sentences with nominative and ergative ‘subject’ (Abas & Grimes 1995:555)
   a. Lao-ka.
      go-1sg.nom
      “I go.”
   b. De? u-lao.
      neg 1sg.erg-go
      “I don’t go.”

4.4 Word order change

The discussion in 4.2 and 4.3 leaves unanswered question c) in §3.2, which involves word order difference. Throughout the comparison between different systems above, word order was not treated as one of the main features to compare. This was because the word order differences observed today in the Indonesian languages can be explained as a result of later innovations, based on, again, a comparison of the positions where the reflex sets occur. Relevant to this is a hypothesis proposed by Starosta, Pawley & Reid (1981), which they refer to as ‘auxiliary axing’. In this section, it will be shown that the word order in the singular transitive systems is readily explained as a result of the ‘auxiliary axing’, while the word order in the two transitive system requires a different explanation.

4.4.1 ‘Auxiliary axing’

It has been mentioned earlier that Starosta, Pawley & Reid (1981) state that, in Proto Extra-Formosan, an auxiliary verb optionally appeared in the sentence initial position (§4.1). They also propose a hypothesis as to how the clitic pronoun came to occur in the sentence initial position in some languages. Their hypothesis is summarised in (32):

(32) ‘Auxiliary axing’ – Change from enclitics to proclitics
(based on Starosta, Pawley, & Reid 1981:152–158)
   a. V =N V ±trns
      Aux ↓
   b. (V) N= V NP...
      Aux ±trns ↓
   c. N= V NP...
      ±trns
‘Auxiliary axing’ is a process where some auxiliary verbs were lost as a result of phonological reduction but still providing a position for a clitic pronoun following it (32b). The enclitic pronoun, having lost the host verb preceding it, was now forced to cliticise to the following verb becoming a proclitic (32c). Starosta, Pawley and Reid consider that this process explains the occurrence of pronominal forms in the sentence initial position in Oceanic languages and it may also account for the development of the so-called ‘passive’ structures in Indonesian. Some facts observed in Chamorro, Ibaloi, and other Northern Philippine languages are presented in support of their claim.

4.4.2 Word order change in the single-transitive systems
‘Auxiliary axing’ appears to account for the word order in both of the single-transitive systems, both those with an accusative-pattern and with an ergative-pattern. The development of the ergative- and accusative-pattern systems from the Proto Extra-Formosan system are illustrated in Figures 3 and 4 respectively, where the three sentence structures on the top indicate the Proto Extra-Formosan system, while the boxed two sentences at the bottom indicate the currently observed systems.

It is worth noting that in these two systems, there are no reflexes of the Proto Extra-Formosan sentence structures without a sentence initial auxiliary verb (cf. (28a–c), the structures in which both Genitive and Nominative followed the main verb).

4.4.3 Word order change in the two-transitive system
Unlike the word order currently observed in single-transitive systems, the word order in the two-transitive system cannot be explained simply as a result of ‘auxiliary axing’. In particular, the Transitive 2 sentence in the two-transitive system (cf. (26.Tt2)) is different from what is expected. It has already been established that the Transitive 2 structure in the two-transitive system is a reflex of the Transitive structure in Proto Extra-Formosan (§4.2). The transitive sentence structure in Proto Extra-Formosan, the expected structure as a result of Auxiliary axing, and the actual Transitive 2 structure in the two-transitive system are shown in (33).

(33) Proto Extra-Formosan Transitive structure and Auxiliary axing

\[
\begin{align*}
\text{a.} & \quad \text{Proto Extra-Formosan} \\
& \quad \text{Aux} = \beta \\
& \quad \text{Transitive} \\
& \quad \text{Proto Extra-Formosan} \\
& \quad \text{Aux} = \text{Gen Actor} + \text{trns} \\
& \quad \text{V} \quad \text{N} \\
& \quad \text{Nom Undergoer}
\end{align*}
\]

\[
\begin{align*}
\text{b.} & \quad \text{Expected} \\
& \quad \beta = \text{V} \quad \text{N} \\
& \quad \text{Transitive 2} \\
& \quad \text{Actor} + \text{trns} \\
& \quad \text{Undergoer}
\end{align*}
\]

\[
\begin{align*}
\text{c.} & \quad \text{Actual} \\
& \quad \text{N} \quad \text{V} \quad \beta \\
& \quad \text{Transitive 2} \\
& \quad \text{Undergoer} + \text{trns} \\
& \quad \text{Actor}
\end{align*}
\]
The development of some Indonesian pronominal systems

<table>
<thead>
<tr>
<th></th>
<th>(V)</th>
<th>N=</th>
<th>V</th>
<th>Aux</th>
<th>Nom=</th>
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<tbody>
<tr>
<td>Intransitive 1</td>
<td></td>
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<th>+trns</th>
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<th>V</th>
<th>Erg</th>
<th>Nom</th>
<th>+trns</th>
<th>Undergoer</th>
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</thead>
<tbody>
<tr>
<td>Transitive</td>
<td></td>
<td></td>
<td></td>
<td>Actor</td>
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</tbody>
</table>

Figure 3. The Development of the 'Ergative-pattern' System

From (33a), the structure shown in (33b), where the clitic pronoun expressing the semantic actor precedes the verb and a pronoun expressing the semantic undergoer follows the verb, would be expected to develop as result of auxiliary axing. However, what we find in languages with the two-transitive system is, as shown in (33c), that the pronoun expressing the semantic undergoer precedes the verb.

I argue here that the Transitive 2 structure in the two-transitive system was acquired as a result of the retention of the earlier Genitive positions combined with the fronting of the earlier Nominative.

As has been mentioned earlier (§2.1), the reflexes of Proto Extra-Formosan Genitive enclitics occur as either proclitics, enclitics, or both (i.e., a form is either proclitic or enclitic depending on the person and number within a single language). This can be observed in the list of pronominal forms given in (23). Sentence examples illustrating such a situation are given from Totoli in (34), where the first person singular clitic pronoun precedes the main verb and the second person clitic pronoun follows the verb.
Figure 4. The Development of the 'Accusative-pattern' System

(34) Totoli – Examples illustrating proclitic and enclitic within a single system (Himmelmann 1996: 125)

a. *Ingga ku-kotoi.*
   neg 1sg-know
   “I don’t know.”

b. *Ingga kotoi-mu?*
   neg know-2sg
   “You don’t know?”

Although various possible explanations of this situation have appeared in the literature (cf. Clayre 1996; Friberg 1996; Himmelmann 1996; van den Berg 1996),18 it seems to be best explained as a continuation of one or the other of the two positions which existed for clitics at an earlier stage, which is repeated in (35a, b). As shown in (35), if the Genitive clitic positions in both of the earlier structures are retained, we would find a system where forms belonging to the same pronoun
The development of some Indonesian pronominal systems

paradigm occurring both preceding and following the verb, and that is what we find in some languages with the two-transitive system.

(35) Proto Extra-Formosan Transitive structures and the reflex structure in the two-transitive system

a. PEF Transitive: \[ V = \beta \quad V = \beta \quad N \]
   \[ \text{Aux=Gen} \quad +\text{trns} \quad \text{Nom} \]
   \[ \text{Actor} \quad \text{Actor} \quad \text{Undergoer} \]

b. PEF Transitive: \[ V = \beta \quad N \]
   \[ +\text{trns} = \text{Gen} \quad \text{Nom} \]
   \[ \text{Actor} \quad \text{Actor} \quad \text{Undergoer} \]
   ↓

c. Transitive 2: \[ \beta = V = \beta \quad N \]
   \[ +\text{trns} = \text{Gen} \quad \text{Nom} \]
   \[ \text{Actor} \quad \text{Actor} \quad \text{Undergoer} \]

The noun phrase expressing the semantic undergoer occurring preceding the verb (and the clitic pronoun expressing the actor) can be explained as a result of the ‘fronting’ of the earlier Nominative noun, probably by topicalisation. The reflexes of the Proto Extra-Formosan Nominative nouns (often described as ‘the focused noun’) occurring in the clause initial position is commonly observed in languages in Sulawesi and other Indonesian languages. Examples are shown from Kaili (Sulawesi) in (36) and (37). In sentences (36), which are unmarked, the Nominative noun phrases occur sentence finally (thus following the verb and the other noun), while in (37) where topicalised, they are fronted and therefore occur in the sentence initial position. Probably from such structures, the structures with the Nominative noun in the clause initial position became the default structure, and as a result, the other word order was lost.

(36) Kaili (Sulawesi) – Sentences reflecting earlier word order (Evans 1996:177)

a. \[ Na.\textit{ngande} \quad \textit{loka} \quad \textit{yaku}. \]
   \[ \text{real.eat} \quad \text{banana} \quad 1\text{sg} \]
   “I eat bananas.”

b. \[ Ni.\textit{kande} \quad =\textit{ku} \quad \textit{loka}. \]
   \[ \text{real.eat} \quad =1\text{sg} \quad \text{banana} \]
   “Bananas were eaten by me.”

c. \[ Ni.\textit{kande} \quad n-\textit{tona} \quad \textit{loka}. \]
   \[ \text{pass.real.eat} \quad \text{gen.-people} \quad \text{banana} \]
   “Bananas were eaten by people.”
(37) Kaili (Sulawesi) – Sentences reflecting fronted Nominatives
(Evans 1996:177)

a. \textit{Ya ku na.ngande loka.}
1SG REAL.eat REA
danana
“I eat bananas.”

b. \textit{Loka ni.kande =ku.}
ni.kande
banana REAL.eat =1SG
“Bananas were eaten by me.”

c. \textit{Loka ni.kande n-tona.}
ni.kande
banana PASS.REAL.eat GEN-people
“Bananas were eaten by people.”

Based on the discussion above, the proposed development of the two-transitive system from the Proto Extra-Formosan system is shown in Figure 5. The original position for Nominative nouns in Proto Extra-Formosan and the acquired (fronted) position are indicated with circles.

The development of the ‘passive’ structure in Indonesian, Balinese, and other languages can be explained as a subsequent innovation; however, space forbids detailed discussion of this claim.

5. Concluding remarks

In this study, I have attempted to clarify parts of the morphosyntactic development involving the pronominal systems that took place in some Indonesian languages. The procedure is summarised below.

First, sentence structures were described and classified according to the number of the ‘core noun phrases’, which classified sentence structures into ‘transitive’ (with two core noun phrases) and ‘intransitive’ (one core noun phrase). The transitive structures were further classified into two (the so-called ‘agentive voice’ and ‘objective voice’), according to the relative positions of the noun phrases. As a result, three Indonesian systems were described, namely the two-transitive system and the single-transitive system, the latter being further classified into ergative-pattern and accusative-pattern systems. Based both on an internal comparison and on a comparison with the reconstructed Proto Extra-Formosan system, cognate structures were confirmed and the scenario as to how each Indonesian system developed from the Proto Extra-Formosan system was clarified.

The method applied here differs from those where historical developments are claimed based only on mere typological comparison. First, the method started with the description of a restricted set of sentence structures the historical development of which was in question. Procedures that were specific to the historical problem
The development of some Indonesian pronominal systems

Figure 5. The Development of the 'Two-transitive' Systems

were applied. For example, pronominal forms and agreement markers, which may share the same historical source although they synchronically carry different syntactic properties, were examined together, and when two such forms occurred, the potentially more conservative one (i.e., the form that had undergone greatest grammaticalisation) was taken. The word order between certain elements, when it could be explained as a later innovation, was ignored. Second, it used the reflexes of a pronominal set and their positions to determine the cognate structures and to ‘trace’ the changes that the cognate structures have undergone. In other words, the comparison and reconstruction of the relevant sentence structures were not based
on a simple comparison of structures, but were integrated with lexical comparison. The results are the hypotheses as to how the three different systems developed have been presented in Figures 3 to 5.

A general point of interest is that although the direction of the change that the two-transitive system and the single-transitive systems differed, they still seem to reflect a general change from a morphologically marked system to a word order oriented pronominal system. It appears that once word order marking becomes dominant, earlier morphological distinctions among pronominal sets starts getting lost.

Clitic pronouns retained their semantic role (actor or undergoer) and their relative position according to their host (main verb), whereas other nominal types underwent far more changes. This seems to support the claim that the semantics serves as a vessel in historical changes.

The results also suggest implications for subgrouping, however, these are yet to be explored in detail. A further topic that remains to be explored is the puzzling question of why the post main verb clitic position is reflected in the two-transitive system while not in the single-transitive systems.

In this paper, only those Indonesian languages that clearly illustrate the three systems were presented. In other Indonesian languages, these systems appear in various modified ways. The examination of the differences these languages exhibit from what has been described here and proposed in this study, and how the pronominal forms correlate or do not correlate with these differences, should help to clarify genetically inherited from the innovated features in them, and to capture the full picture of morphosyntactic change that has taken place.

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>acc</td>
<td>accusative</td>
</tr>
<tr>
<td>AD</td>
<td>adjunction</td>
</tr>
<tr>
<td>AF</td>
<td>actor focus</td>
</tr>
<tr>
<td>AV</td>
<td>agentive voice</td>
</tr>
<tr>
<td>Aux</td>
<td>auxiliary verb</td>
</tr>
<tr>
<td>BF</td>
<td>benefactor focus</td>
</tr>
<tr>
<td>DEF</td>
<td>definite</td>
</tr>
<tr>
<td>EX</td>
<td>exclusive</td>
</tr>
<tr>
<td>FUT</td>
<td>future tense</td>
</tr>
<tr>
<td>Gen</td>
<td>Genitive</td>
</tr>
<tr>
<td>GF</td>
<td>goal focus</td>
</tr>
<tr>
<td>IF</td>
<td>instrumental focus</td>
</tr>
</tbody>
</table>
The development of some Indonesian pronominal systems

\[ \text{intransitive} = \text{boundary between a clitic pronoun and the host verb} \]

Notes

* This is part of a research conducted on the JSPS (Japanese Society for the Promotion of Science) grant to conduct research at the Research School of Pacific and Asian Studies, the Australian National University (March 2000 to February 2002). I would like to thank Sander Adelaar, Wayan Arka, Lea Brown, Andy Pawley, and Laurie Reid for helpful comments and suggestions on an earlier version of this paper.


2. Some lower order subgroups have been proposed, for example, see Adelaar (1992) for the Malayic group, Mead (1998) for the Bungku-Tolaki group, and Mills (1975) for the South Sulawesi group.

3. ‘Western Malayo-Polynesian has . . . been used as a convenient “catch-all” category for all Malayo-Polynesian languages which do not exhibit the innovations diagnostic of Central-Eastern Malayo Polynesian . . . the WMP languages are the residue that results from subtracting the CEMP languages from the MP category’ (Blust 1997:30).

4. Although agreement markers and pronouns have syntactically different characteristics, it is commonly known that they can often originate from the same source, through such processes as grammaticalisation and lexicalisation, and can potentially participate in a single cognate set. Therefore, in a morphosyntactic comparison such as the one shown in this study, agreement markers and pronominal forms are examined together, ignoring (synchronic) syntactic differences. For the same reason, in the determination of the typological pattern of the occurrence of pronouns, the more grammaticalised set is treated as the more conservative in this study. For example, when a language has a set of agreement marking forms and a set of full pronouns, the pattern of the agreement marking forms is used in the typological classification, rather than that of full pronouns. See Tetun examples (12) and (13) for one such analysis.

5. This system is referred to as a ‘split-ergative’ system in some descriptions.

6. The positions of Ns in relation to the V may differ depending on the language. For example, the sole argument in an intransitive sentence may occur preceding the main verb as well. Likewise, the N expressing the undergoer in Transitive 1 may occur preceding the V.

7. The so-called ‘passive structures’ in Indonesian languages can usually be considered to be a variety of Transitive 2, because the two Ns of ‘passive’ structures usually follow the pattern of Transitive 2 sentences. A comparison of the forms of the preposition marking the ‘actor’ support the claim that these ‘passive structures’ are innovations that developed from the Transitive 2 structure. Details will be discussed in a separate paper.

8. The forms appear with an initial sound o in the position N₂ as in (3).
9. Marked undergoer nouns, such as topicalised (fronted) undergoers, may precede the verb and the actor in these languages.

10. Reid (1999:17) suggests the possibility that there were two Nominative sets in Proto Austronesian, one occurring in intransitive sentences and the other in transitive sentences.

11. In this paper, the term ‘Nominative’ is used to refer to the case that marks the sole argument of single argument intransitive sentences in both accusative and ergative languages, eliminating the term Absolutive for ergative languages. This provides better cross-linguistic generalisations and greater consistency in a discussion of the development of morphosyntactic structures.

12. The same pronoun set indicated both the Agent of transitive and the possessors of nouns, and therefore, this pronoun set is referred to as the Genitive pronoun set rather than Ergative.

13. It can be seen in the table that what Klamer (1998) refers to as ‘Genitive’ and ‘Dative’ sets are the reflexes of earlier Genitive and Nominative sets, respectively, with prenasalisation, while the ‘Nominative’ and ‘Accusative’ sets are the reflexes of earlier Genitive and Nominative without prenasalisation, reflecting independent innovations that subsequently took place in the language.

14. The term morphological differentiation is used to refer to an innovation by which the syntactic features of a single form at an earlier stage become distributed over two (or more) distinct forms at a later stage. See Kikusawa (2002:183–184) for examples of this type of innovation.

15. As will be shown later, the difference of the ‘β’ positions in relation to the verb in the three systems is explained as a result of later innovations. See §4.4.

16. The Intransitive 2 structures (27b) and (28b) correspond to the so-called ‘actor focus (AF)’, while the Transitive structures (27c) and (28c) correspond to the so-called ‘goal focus (GF)’, ‘locative focus (LF)’, ‘benefactive focus (BF)’ and ‘instrumental focus (IF)’.

17. See for example Wolff (1973 and 1996) for relevant discussion.

18. If the pre-main verb clitic position was acquired as a result of ‘auxiliary axing’, it would be expected that the proclitic started with the second person and then spread to other person numbers, in that it was probably loss of an imperative auxiliary (‘go do’) that initiated the process (for discussion, see Starosta, Pawley & Reid 1981:152–158). However, as Himmelmann mentions (1996:132), the occurrence of proclitic pronouns follows the person hierarchy, namely, ‘the presence of third person preposed pronominal forms implies the presence of first and second person forms, the presence of second person implies the presence of a first person’.

References


The development of some Indonesian pronominal systems


Quick, Philip (1994). Active and Inverse Voice Selection Criteria in Pendau, a Western Austronesian Language. Proceedings of the Seventh International Conference on Austronesian Linguistics, ed. by Cecilia Ode & Wim Stokhof, 461–481. Leiden: Leiden University, Department of Languages and Cultures of South East Asia and Oceania, Projects Division.


Morphological reconstruction as an etymological method

Harold Koch
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1. Introduction

Etymology has rarely been the subject of presentations at ICHL conferences. Nevertheless, I here offer a discussion about etymology. I am not concerned, however, with the etymology of lexical items so much as with discovering the prehistory of morphological elements. There is a sense in which morphological reconstruction involves describing the etymology of formatives. Moreover, I would like to compare the methodology of doing morphological reconstruction in general with the methodology of etymology.

By etymology I am thinking in particular of the reconstruction of lexemes. A proper etymological description of lexical items requires the tracing of their prehistory to the earliest reconstructable source and the full explication of the phonological, semantic, and morphological changes that have transformed the item from its earliest reconstructable description to its attested description in the languages under study. What is desired is a total accounting. While lexical items are expected to conform to the general phonological changes of the respective languages, it is acknowledged that many of the non-phonological developments will be particular to a given lexical item. Etymological method thus emphasises the particular over the general. Etymological method also depends probably more on the imaginative exploitation of available data of various kinds than on the mere application of exact procedures.

Etymological research cannot, of course, be reduced to strict, unfailing, mathematical formulae. The ingenuity of the researcher, his power of invention and combination, that peculiar gift by which he is able to discover connections hidden under a surface discrepancy, cannot be replaced by any mechanical rules. (Szemerényi 1977: 346)
Harold Koch

(This creative aspect of etymological practice has been emphasised by Yakov Malkiel in various publications (see Malkiel 1962, 1989, 1993)). Successful etymologising also relies, of course, on an understanding of the general kinds of changes that are known to occur in languages.

In discussing morphological reconstruction as an etymological method, I am not really proposing a new method of morphological reconstruction. I am rather trying to emphasise certain characteristics of morphological reconstruction that should give caution, as well as hope, to comparativists. Caution is needed against trying to do reconstruction in a mechanical way. Hope is offered, in that when the obvious first comparisons yield little return, relevant evidence may nevertheless be found if one knows where to look. Since morphological formatives undergo functional change just as lexemes undergo semantic change, one characteristic of morphological reconstruction must be the expectation that related formatives need not be found in identical functions. Furthermore, since some morphology may originate from syntax via morphologisation, and some morphology may end up in lexical stems via demorphologisation, morphological reconstruction must not be confined to the comparison of morphological forms, but needs to be open to finding some of its evidence in syntax or in the lexicon. As with the tracking of lexical etymologies, morphological reconstruction must be prepared to pursue its search for comparative evidence to whatever source the trail may lead. Here, of course, the comparativist must be mindful of what kinds of changes are possible in the realm of morphology (for a typology of such changes, see Koch 1996).

The data for my discussion will be largely from a set of closely related languages from central Australia. These were called the Arandic languages by Hale (1962). The assumed historical relationship between them is as indicated on Table 1 (see Hale 1962; Koch 2001).

Table 1. Genetic relationship between the Arandic languages

<table>
<thead>
<tr>
<th>Proto-Arandic</th>
<th>Kayteye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proto-Aranda</td>
<td>Lower Arrernte</td>
</tr>
<tr>
<td></td>
<td>Proto Upper Aranda</td>
</tr>
<tr>
<td></td>
<td>Alywarr</td>
</tr>
<tr>
<td></td>
<td>Akarre and Antekerrepenh</td>
</tr>
<tr>
<td></td>
<td>Anmatyerr</td>
</tr>
<tr>
<td></td>
<td>Eastern and Central Arrernte</td>
</tr>
<tr>
<td></td>
<td>Western and Southern Arrernte</td>
</tr>
</tbody>
</table>

2. Lexical and morphological comparison

2.1 Lexical reconstruction: comparative wordlists vs. cognate sets

Before turning to morphological reconstruction, let us consider the nature of lexical reconstruction, which is the domain that first comes to mind when we talk about etymology. Here I would like to emphasise the difference between comparative wordlists and sets of cognates.

Since the 1950s, with the introduction of lexicostatistical methods into historical-comparative linguistics and the widespread availability of sets of comparable lexical data on related languages, it has become fashionable to begin lexical reconstruction by inspecting comparative wordlists. Here a matrix is produced, wherein lexical meanings are listed and lined up with the respective translation equivalents in each of the related languages which enter into the comparison. Then an attempt is made to reconstruct a proto-form for each set of translinguistic synonyms which are judged to be cognate. Non-cognate synonyms and obvious loanwords are discarded for these purposes. From these cognates sets of corresponding phonemes are extracted, which enable the historical phonology of the languages to be worked out and the proto-forms to be reconstructed.

While this is a sound procedure for making a start to the comparative phonology, it is limited in how far it can take the comparativist with respect to lexical reconstruction. The reason is that many of the true cognates that exist in the related languages are not to be found as exactly matching translinguistic synonyms. Wherever semantic shift has taken place, the true cognates which may be extant in one language must be sought outside of the row (or column) in the matrix which corresponds to the gloss of another language.

As an illustration, consider in the first instance the first three columns only of Table 2, which present a partial comparative wordlist for English and German. Here only one of seven translinguistic synonymic pairs is actually cognate. The other six pairs of synonyms yield nothing of use for reconstruction. Yet cognates do exist for these six glosses; they are not found, however, in the cell which gives the most common expression of the meaning given in the ‘gloss’ column. For each of these cognate pairs one or both of the terms has undergone some semantic change, whether generalisation, specialisation, or merely shift in register (arguable for swine).

For a second illustration let us turn to the Arandic languages. In Table 3 I present the translinguistic synonyms corresponding to three meanings in eight language varieties, taken from Hale (n.d.), but represented in a modified orthography. Here I have altered the format of the matrix from that of Table 2 to show the synonyms in the columns rather than in the rows.

If we compare the three lexical sets only within columns, we would have to conclude that none of the meanings present exact cognates in all varieties. Ex-
Table 2. English-German comparative wordlist

<table>
<thead>
<tr>
<th>Gloss</th>
<th>English</th>
<th>German</th>
<th>cognate?</th>
<th>other English</th>
<th>other German</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 “cow”</td>
<td>cow</td>
<td>Kuh</td>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 “pig”</td>
<td>pig</td>
<td>Schwein</td>
<td>no</td>
<td>swine</td>
<td></td>
</tr>
<tr>
<td>3 “dog”</td>
<td>dog</td>
<td>Hund</td>
<td>no</td>
<td>hound</td>
<td></td>
</tr>
<tr>
<td>4 “animal”</td>
<td>animal</td>
<td>Tier</td>
<td>no</td>
<td>deer</td>
<td></td>
</tr>
<tr>
<td>5 “bird”</td>
<td>bird</td>
<td>Vogel</td>
<td>no</td>
<td>fowl</td>
<td></td>
</tr>
<tr>
<td>6 “tree”</td>
<td>tree</td>
<td>Baum</td>
<td>no</td>
<td>beam</td>
<td></td>
</tr>
<tr>
<td>7 “head”</td>
<td>head</td>
<td>Kopf</td>
<td>no</td>
<td>Haupt</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Arandic comparative wordlist

<table>
<thead>
<tr>
<th>language</th>
<th>“forehead”</th>
<th>“eye”</th>
<th>“flame”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Kaytetye</td>
<td>rlanperre</td>
<td>urle</td>
<td>urlenthe</td>
</tr>
<tr>
<td>2 North Alyawarr</td>
<td>urle</td>
<td>atnng</td>
<td>berrarne</td>
</tr>
<tr>
<td>3 South Alyawarr</td>
<td>urle</td>
<td>atnng</td>
<td>berrarne</td>
</tr>
<tr>
<td>4 Akarre</td>
<td>urle</td>
<td>alknge</td>
<td>berrarne</td>
</tr>
<tr>
<td>5 Eastern Arrernte</td>
<td>urle</td>
<td>alknge</td>
<td>alkngethe</td>
</tr>
<tr>
<td>6 Anmatyerr</td>
<td>url(ange)</td>
<td>anng(ange)</td>
<td>anngenthe</td>
</tr>
<tr>
<td>7 Western Arrernte</td>
<td>urle</td>
<td>alknge</td>
<td>alkngethe</td>
</tr>
<tr>
<td>8 Southern Arrernte</td>
<td>rletne</td>
<td>alknge</td>
<td>alkngethe</td>
</tr>
</tbody>
</table>

Examining first the “eye” column, we note that all varieties except Kaytetye appear to have a cognate form, reconstructable to Proto-Aranda (but not Proto-Arandic) presumably as *alknge (Koch 2001:80). In Anmatyerr, -ange is an increment which occurs only in the citation Nominative case, which has no overt case-marker, to carry the stress; other case forms show the expected stems: e.g. Locative anngel, Dative anngel.  

Examining the “forehead” column, we note that the forms of all varieties appear to be at least partially cognate, sharing an initial part *urle. The Southern Arrernte form contains extraneous material, -tne, of uncertain origin, which, however, does not affect the meaning; the initial vowel in this variety has also disappeared. It remains plausible, however, that this form continues the urle found elsewhere. The Kaytetye form is the most aberrant and involves a second element -nperre (or -tnperre according to more recent recordings by Koch and Turpin) of uncertain origin; the first element is cognate with the urle found elsewhere; it involves loss of the initial vowel and transfer of rounding to the next vowel. Comparison with “eye” in the next column suggests that rlanperre is derived from a combination of urle “eye” and an element -(t)nperre. It would appear that the second formative is responsible for modifying the meaning from “eye” to “forehead”.
Now, if we are willing to look for cognates with a different meaning (i.e. in a different column of the matrix), we can see quite clearly that Kaytetye “eye” is cognate with “forehead” in all the other varieties. So a form *urle can be reconstructed for proto-Arandic after all; the only problem remaining is to decide whether its earlier meaning was “forehead” and it shifted to “eye” in Kaytetye or whether it meant “eye” and changed to “forehead” in the other varieties (which form a subgroup); in fact, cognates further afield (Proto-Karnic *ngurlu and Proto-Paman “ngulu ”forehead”) suggest the former scenario. (Note by the way that this contradicts the more usual direction of semantic change from part to whole that has been established by Wilkins (1996:284)).

If we are seriously interested in finding true cognates (including partial cognates) of urle, rather than just translation equivalents, we also need to consider the representatives of the gloss “flame”. Apart from varieties 2–4, these appear to consist of the respective word for “eye” combined with an element -nthe. Hence Kaytetye “flame” should also be included as a (partial) cognate of the urle words. Meanwhile -nthe is separately attested, with the meaning “flame”, in derivatives such as Eastern and Central (E&C) Arrernte nthile- “light a fire, make flames” (= nth “flame + -ile- “make/FACTITIVE”)\(^5\) and nthke-iwe- “put (carcass) on the flames (to singe the fur)” (= nthke-ke “flame-DATIVE” + iwe- “throw”) (Henderson & Dobson 1994:508, 506).

If we rearrange our data according to cognate sets rather than synonym sets, we get the results shown in Tables 4 and 5. Words are grouped together if they are cognate, regardless of their meaning. Partial cognates are also included, for the light they shed on the etymology of the forms. The reconstructed proto-forms and their meanings are also included. Such a listing actually constitutes a fragment of an etymological dictionary.

| Table 4. Arandic cognate set for “eye” |
| language | word | gloss | comment |
| Kaytetye | urle | eye | |
| North Alyawarr | urle | forehead | |
| South Alyawarr | urle | forehead | |
| Akarre | urle | forehead | |
| Eastern Arrernte | urle | forehead | |
| Anmatyerr | url(ange) | forehead | -ange increment |
| Western Arrernte | urle | forehead | |
| Southern Arrernte | rletne | forehead | -tne uncertain origin |
| Kaytetye | rluperre | forehead | *urle + nperre |
| Kaytetye | urlenthe | flame | “eye” + nthe |
| Proto-Arandic | *urle | forehead | |
Table 5. Arandic cognate set for "flame"

<table>
<thead>
<tr>
<th>Language</th>
<th>Form</th>
<th>Meaning</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaytetye</td>
<td>urlenethe</td>
<td>flame</td>
<td>urle “eye”</td>
</tr>
<tr>
<td>Eastern Arrernte</td>
<td>alkingenthe</td>
<td>flame</td>
<td>alknge “eye”</td>
</tr>
<tr>
<td>Anmatyer</td>
<td>anngenthe</td>
<td>flame</td>
<td>annge “eye”</td>
</tr>
<tr>
<td>Western Arrernte</td>
<td>alkingenthe</td>
<td>flame</td>
<td>alknge “eye”</td>
</tr>
<tr>
<td>Southern Arrernte</td>
<td>alkingenthe</td>
<td>flame</td>
<td>alknge “eye”</td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>nthile-</td>
<td>light fire, make flames</td>
<td>ile- *“make”</td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>nthkeke-iwe-</td>
<td>put on the flames</td>
<td>iwe- *“throw”</td>
</tr>
<tr>
<td>Proto-Arandic</td>
<td>*inthe</td>
<td>flame</td>
<td></td>
</tr>
</tbody>
</table>

It should be obvious that, for the purposes of reconstructing the bulk of the vocabulary of a proto-language, or, equivalently, for describing the origins of the vocabulary of a set of related languages, we need to work from cognate sets such as Tables 4 and 5 rather than from comparative wordlists such as Table 3.

2.2 Morphological comparison: comparative tables vs. cognates

The same considerations that apply to lexical reconstruction also apply to the reconstruction of morphology. Here too the first attempt at reconstruction usually begins with the construction of a comparative table of affixes arranged according to the inflectional properties they express. As with lexical reconstruction, this may yield some valid results, but it may also fall short of providing reconstructions for all the relevant inflectional properties. Where can one look for further cognate material? Is there in inflectional morphology an analogue to lexical changes such as semantic shift, compounding, and incrementalisation that disturb the relationship between glosses and forms?

2.2.1 Functional shift of grammatical words

It is clear that semantic or functional shift applies to grammatical as well as lexical forms. Consider the ‘grammatical’ word class of personal pronouns. Table 6 gives the partial case paradigms of First Person pronouns in several varieties of the Upper Aranda subgroup of the Arandic languages. While the Nominative forms agree (apart from the typical Arandic variability of the initial vowel) and the Accusative forms can be explained as innovations based on the Nominative (for details see Koch 1996:253–256), the Dative form of 1Sg in Western Arrernte, nwke, stands out as totally unrelated to the forms of other varieties.

A brief look at the 1st Person Plural forms in Table 7, however, reveals cognates of this aberrant form. Alyawarr has Inclusive and Exclusive forms, the latter distinguished by a suffix -rne added to the pronoun root. (In Alyawarr the pronouns are further inflected for a kinship-related category, which is irrelevant to
Morphological reconstruction as an etymological method

Table 6. Comparative table of 1st Person Singular pronouns in some languages of the Aranda branch

<table>
<thead>
<tr>
<th>language</th>
<th>Person-Number</th>
<th>NOM</th>
<th>ACC</th>
<th>DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alyawarr</td>
<td>1Sg</td>
<td>ayenge</td>
<td>ayenhe</td>
<td>atyenge</td>
</tr>
<tr>
<td>Eastern Arrernte</td>
<td>1Sg</td>
<td>yenge</td>
<td>yenge</td>
<td>atyenge</td>
</tr>
<tr>
<td>Western Arrernte</td>
<td>1Sg</td>
<td>yenge</td>
<td>yenge</td>
<td>nweke</td>
</tr>
</tbody>
</table>

Table 7. Comparative table of 1st Person Plural pronouns in Aranda languages

<table>
<thead>
<tr>
<th>language</th>
<th>Person-Number</th>
<th>NOM</th>
<th>ACC</th>
<th>DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alyawarr</td>
<td>1PlInc</td>
<td>anw-</td>
<td>anwenh-</td>
<td>anwek-</td>
</tr>
<tr>
<td>Alyawarr</td>
<td>1PlExc</td>
<td>anwern-</td>
<td>anwernenhe-</td>
<td>anwernek-</td>
</tr>
<tr>
<td>Eastern Arrernte</td>
<td>1Pl</td>
<td>anwerne</td>
<td>anwerneke</td>
<td></td>
</tr>
<tr>
<td>Western Arrernte</td>
<td>1Pl</td>
<td>nwerne</td>
<td>nwerneke</td>
<td></td>
</tr>
</tbody>
</table>

Table 8. Cognate sets of 1st Person Dative pronouns in Aranda languages

<table>
<thead>
<tr>
<th>language</th>
<th>Form</th>
<th>Gloss</th>
<th>Form</th>
<th>Gloss</th>
<th>Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alyawarr</td>
<td>atyenge</td>
<td>1SgDat</td>
<td>anwek-</td>
<td>1PlIncDat</td>
<td>anwernek-</td>
<td>1PlExcDat</td>
</tr>
<tr>
<td>Eastern Arrernte</td>
<td>atyenge</td>
<td>1SgDat</td>
<td>anwek-</td>
<td>1PlIncDat</td>
<td>anwernek-</td>
<td>1PlExcDat</td>
</tr>
<tr>
<td>Western Arrernte</td>
<td>nweke</td>
<td>1SgDat</td>
<td>nwerneke</td>
<td>1PlDat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proto-Aranda</td>
<td>*atyenge</td>
<td>*1SgDat</td>
<td>*anweke</td>
<td>*1PlIncDat</td>
<td>*anwerneke</td>
<td>*1PlExcDat</td>
</tr>
</tbody>
</table>

our argument.) The Eastern and Western Arrernte forms correspond to the longer, Exclusive forms of Alyawarr, and there are no corresponding short forms of these pronouns. But the expected short form of the Dative is precisely what we find in the 1Sg of Western Arrernte. The obvious reconstruction is to propose that the erstwhile 1Pl Dative Inclusive form has shifted to a Singular meaning, replacing *atyenge. (The redundancy of the former Inclusive form was in turn presumably a consequence of the loss of contrast between an earlier Inclusive and Exclusive form in Eastern and Western Arrernte.)

If we arrange the Dative forms by cognates rather than by synonymous functions, we get the arrangement shown in Table 8, along with the Proto-Aranda terms we can reconstruct from them. (The 1Sg Dative can be reconstructed further back, to Proto-Arandic, since it is attested in Kaytetye as well (see Koch 1997:258).)

2.2.2 Functional shift of inflectional affixes

In Tables 6 and 7 we compared paradigms. Morphological reconstruction often begins from just comparative tables of affixes. A first attempt at reconstructing...
Arandic verb inflection might proceed from a comparative list such as Table 9 (taken from Hale (n.d.), but with spelling adapted as in Tables 3, 4 and 5).

Here the Kaytetye Present does not match the form of the other varieties, and the Conditional (= Potential) appears to be only a partial cognate; -mere apparently consists of an extension to -me. A possible historical scenario is that *-me was the protoform of the Present, and Kaytetye replaced this with a new form -nke (of uncertain origin) and shifted -me to the Conditional function, where it came to be used in free variation with a pre-existing form -mere. The other varieties,

<table>
<thead>
<tr>
<th>Table 9. Arandic verb inflections: comparative affix list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>1 Kaytetye</td>
</tr>
<tr>
<td>2 North Alyawarr</td>
</tr>
<tr>
<td>3 South Alyawarr</td>
</tr>
<tr>
<td>4 Akarr</td>
</tr>
<tr>
<td>5 Eastern Arrernte</td>
</tr>
<tr>
<td>6 Anmatyerr</td>
</tr>
<tr>
<td>7 Western Arrernte</td>
</tr>
<tr>
<td>8 Southern Arrernte</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 10. Arandic verb inflections: cognate affixes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Kaytetye</td>
</tr>
<tr>
<td>Kaytetye</td>
</tr>
<tr>
<td>North Alyawarr</td>
</tr>
<tr>
<td>South Alyawarr</td>
</tr>
<tr>
<td>Akarr</td>
</tr>
<tr>
<td>Eastern Arrernte</td>
</tr>
<tr>
<td>Anmatyerr</td>
</tr>
<tr>
<td>Western Arrernte</td>
</tr>
<tr>
<td>Southern Arrernte</td>
</tr>
<tr>
<td>Proto-Arandic</td>
</tr>
<tr>
<td>Kaytetye</td>
</tr>
<tr>
<td>North Alyawarr</td>
</tr>
<tr>
<td>South Alyawarr</td>
</tr>
<tr>
<td>Akarr</td>
</tr>
<tr>
<td>Eastern Arrernte</td>
</tr>
<tr>
<td>Western Arrernte</td>
</tr>
<tr>
<td>Southern Arrernte</td>
</tr>
<tr>
<td>Proto-Arandic</td>
</tr>
</tbody>
</table>
meanwhile, used only the extended form -mere to mark the Conditional. The inflectional data of Table 9 and its etymological interpretation are re-presented in Table 10 using a format that groups together the cognate affixes and presents the reconstructed proto-affixes.

It is well known from comparative work in well-studied language families such as Indo-European that cognate affixes need not be functionally equivalent across the relevant languages. Thus it is emphasised by Fox (1995:92ff.) that the cognate Singular case suffixes of Sanskrit, Greek, and Latin, reflecting Proto-Indo-European *-i, have the functions of Locative, Dative, and Ablative in the respective languages.

2.3 Morphological reconstruction and types of morphological change

In doing morphological reconstruction, especially when a preliminary comparison of comparative data fails to yield satisfactory results, a major issue is what to compare. Where can cognate forms be found if not in the expected cell of a comparative table? Obviously there is a need to “think outside the square”, as it were. An adjacent column or row of the matrix may reveal the likely cognate in cases where there has been a functional shift such as Plural to Singular or Present to Conditional. In other cases it may be necessary to search further afield, even outside of the comparative tables of inflectional markers. In principle the cognate formatives may be found in any place in the linguistic system that can be linked by a sequence of plausible linguistic changes. In effect, tracing the cognates and origins of inflectional formatives may be as complicated as the etymological study of lexical items. It is this fact that I am emphasising in describing morphological reconstruction as an etymological method.

In seeking the origins of inflection the comparativist therefore needs to be aware of what kinds of morphological change are possible. Here I would like to mention a few types that will concern us (for a fuller typology see Koch 1996). In this paper I am concerned with the implications for reconstruction of three kinds of morphological change: (1) the functional shift of formatives, (2) the morphologisation of syntax, and (3) the demorphologisation of formatives.

The first type has already been illustrated, and is the morphological analogue of semantic change in lexemes. The second type results from the reanalysis of erstwhile separate words or clitics as affixes; much of this kind of change can be described as grammaticalisation. I have previously referred to the third type as ‘absorption’ (Koch 1995, 1996:237); it has been called ‘demorphologisation’ by Hopper:

When a morpheme loses its grammatical-semantic contribution to a word, but retains some remnant of its original form, and thus becomes an indis-
tistinguishable part of a word’s phonological construction, I shall speak of the resulting phonological material as **morphological residue**, and of the process itself as **demorphologization**.

(Hopper 1990: 154)

The results of the second type of change can be described by Givón’s (1971:413) aphorism: “Today’s morphology is yesterday’s syntax”. The situation resulting from the third kind of change could be characterised by a similar saying: “Today’s lexicon includes yesterday’s morphology.” The first kind of change, functional shift, may take place purely within the morphology of language. Hence cognate formatives are to be found within the morphology of the respective languages, even if not in the matching functional slots. The other two changes involve change between the morphology and another component external to the morphology – the syntax for the second type and the lexicon for the third type. The etymology of inflectional formatives in the second situation will therefore be in separate words. In the third situation the evidence for earlier inflectional formatives will come from what Hopper called ‘morphological residue’ found within lexical stems.

3. **Person inflection in Arandic kin nouns**

In most of the varieties of Arandic, kin nouns are inflected for the category of possessor (or ‘propositus’ in the terminology introduced by Heath et al. (1982)). The contrastive set of inflectional properties includes three Persons in the singular as well as a Dyadic (e.g. “mother-dyad” means “mother and child”) and in some varieties a marker of Plural Set (e.g. “mother and children”). Table 11 gives a comparative set of forms for several varieties.

3.1 **Reconstruction of morphologisation**

The W Anmatyerr Dyadic suffix is followed by the Dual suffix -atherre. Note that W Arrernte does not inflect kin terms for Person, but only for Dyadic and Plural Set. The only affix that can be reconstructed here to the ancestor of all the languages is -nhenge DYAD. The Plural Set is found in too few languages. The Person markers could be reconstructed to Proto-Aranda, the language ancestral to all but Kayte-tye. The markers of 2nd and 3rd Person are indeed cognate right across Arandic, but cannot be reconstructed as affixes because of their contrasting positions, pre-fixal in Kaytetye and suffixal in Aranda. As expounded in Koch (1996:256ff.), they must be reconstructed as separate words; they were in fact short forms of the corresponding Dative Singular pronouns, that came to be attached first as clitics and then as affixes onto opposite sides of the kin noun in the two branches of Arandic. Here morphological reconstruction leads to a blank in the expected cell of the ma-
Morphological reconstruction as an etymological method

Table 11. Comparative table of kin noun suffixes in Arandic

<table>
<thead>
<tr>
<th></th>
<th>DYAD</th>
<th>PL Set</th>
<th>1SG</th>
<th>2SG</th>
<th>3SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alyawarr</td>
<td>-nhenge</td>
<td>-atye</td>
<td>-ngkwe</td>
<td>-ikwe</td>
<td></td>
</tr>
<tr>
<td>E Anmatyerr</td>
<td>-nhenge</td>
<td>-atye</td>
<td>-angkwe</td>
<td>-ikwe</td>
<td></td>
</tr>
<tr>
<td>W Anmatyerr</td>
<td>-nheengatherre</td>
<td>-atye</td>
<td>-angkwe</td>
<td>-ikwe</td>
<td></td>
</tr>
<tr>
<td>W Arrernte</td>
<td>-nhenge</td>
<td>-ntyerre</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>-nhenge</td>
<td>-ntyerre</td>
<td>-atye</td>
<td>-angkwe</td>
<td>-ikwe</td>
</tr>
<tr>
<td>Lower Arrernte</td>
<td>-ntyerre</td>
<td>-ntyerre</td>
<td>-atye</td>
<td>-angkwe</td>
<td>-ikwe</td>
</tr>
<tr>
<td>Kaytetye</td>
<td>-nhenge</td>
<td>-ye</td>
<td>ngke-</td>
<td>kwe-</td>
<td></td>
</tr>
</tbody>
</table>

Table 12. Cognate kin affixes and Dative pronouns

<table>
<thead>
<tr>
<th></th>
<th>1SG</th>
<th>2SG</th>
<th>3SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>E&amp;C Arrernte</td>
<td>-atye</td>
<td>-angkwe</td>
<td>-ikwe</td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>DAT pronoun</td>
<td>atyenge</td>
<td>ngkwenge</td>
</tr>
<tr>
<td>Kaytetye</td>
<td>kin marker</td>
<td>ngke-</td>
<td>kwe-</td>
</tr>
<tr>
<td>Kaytetye</td>
<td>DAT pronoun</td>
<td>atyenge</td>
<td>ngkenge</td>
</tr>
</tbody>
</table>

trix; the etymological trail of the extant formatives leads outside of morphology to a functionally related class of independent words. Table 12 shows the close synchronic similarity in form between the respective affixes and free pronouns in two representative languages.

3.2 Reconstruction of demorphologisation

The preceding discussion showed the results of morphologisation. We were indeed able to reconstruct proto-forms, but they were not morphological. For an example of demorphologisation, let us return to the 1Sg forms of Table 11. Notice that Kaytetye is alone in having a marker -ye, while the other varieties have -atye, which is derived from the short form of an earlier Dative pronoun. What is the source of the formative -ye? Does it have cognates in the other Arandic languages? To answer these questions we shall need to look at some inflected kin nouns. Table 13 gives the terms for “father / father’s brother”, “mother / mother’s sister”, and the Dyadic “mother and child”7 for several Arandic varieties.

Comparison yields the following. We can reconstruct a Dyadic form of “mother”, *amenhenge, from which a root form *ame- can be extracted for “mother”. The independent form of “mother”, however, can be reconstructed only to Proto-Aranda,8 where it includes an extra element -ye. The Proto-Aranda term for “father” similarly includes an element -ye, which is missing from the Lower Arrente term for “father’s father”. The Lower Arrente term is a compound consisting
of aknge plus arrenge, which in other varieties means “father’s father” by itself; the element akng- here means “male” and serves to distinguish “father’s father” from “father’s father’s sister” (Gavan Breen, pres. comm.). It seems clear that the -ye element does not belong to the kin root. So we need to ask from what source and by what mechanism it came to be included in the independent form of the kinterm. It is identical in form to the 1Sg marker of Kaytetye kin nouns, as shown above on Table 11. Is it related, and if so, how did it come to have its current distribution?

Note that this -ye has an affinity with the 1Sg marker. The W Anmatyerr form ameye given on Table 13 has a gloss “my father”. Also -ye is given as an alternative to -atye as the marker of 1Sg in Alyawarr (Yallop 1977:91). This suggests that within Aranda -ye may have been an earlier marker of 1Sg, as it still is in Kaytetye. There is a tendency in the Arandic languages to use the 1Sg-marked form as a general term for the kin relation. For example, in Eastern and Central Arrernte m-atye (“mother-1Sg”) is defined thus:

matye 1. my / our mother, etc. (+atye “my/our relation”) 2. [SOME SPEAKERS] mother (not necessarily mine / ours). =meye.

(Henderson & Dobson 1994:475)

For Alyawarr, the 1Sg of “father”, which is suppletive, is used with an independent possessive pronoun to indicate Second and Third Person possessor (Yallop 1977:91), as shown on Table 14. It is argued in Koch (1995:52f.) that the relative naturalness of this usage of 1Sg forms for any Person led to a reanalysis of some

\begin{table}
\centering
\begin{tabular}{|l|l|l|l|}
\hline
        & M-DYAD       & M(Z)       & F(B)       \\
\hline
Alyawarr       & amenhenge   & ameye M(Z) & akngeye F(B) \\
E Anmatyerr     & menhengatherre & ameye M(Z) & \text{akngeye my F} \\
W Anmatyerr     & menhenge     & meye M(Z)  & kngeye F \\
W Arrernte      & menhenge     & meye M     & akngeye F(B) \\
E&C Arrernte    & menhenge     & meye M     & \text{akngeye F} \\
Lower Arrernte  & menhende     & meye M     & \text{akng-arrenge FF} \\
Proto-Aranda    & *ame-nhenge  & *ameye     & \text{akngeye} \\
Kaytetye        & amenhenge    & arrenkwe M(Z) & \text{arlye} \\
Proto-Arandic   & *ame-nhenge  &           &            \\
\hline
\end{tabular}
\caption{Comparative table of inflected kin nouns}
\end{table}

\begin{table}
\centering
\begin{tabular}{|l|l|l|l|}
\hline
        & my F        & aynengkwe  & aynikwe  \\
\hline
        & akngeye     & akngeye atyenhe & akngeye ikwenhe \\
\hline
\end{tabular}
\caption{Alyawarr possessor paradigms for “father”}
\end{table}
1Sg-inflected kin terms as bare stems, with the consequent absorption of -ye into the lexical stem; this would explain the final -ye of Kaytetye arlweye “father/my father”, according to the etymology proposed there. A similar reanalysis presumably also happened quite generally to -ye forms in the Aranda branch of Arandic. It appears that the -ye forms in Aranda came to be treated by and large as unspecified for Person and a new inflection with -atye was used to mark first Person propositus. The -ye suffix survived as a meaningless stem-extender in some stems, even in dialects such as W Arrernte which otherwise did not preserve Person-marking in kin nouns.

If this scenario is correct, we can after all reconstruct for Proto-Arandic a 1Sg-marking suffix, with the shape *-ye. It has been preserved in this function in Kaytetye, but in the Aranda branch it has largely survived as a partially separable part of the stem of some kin nouns. Its place in the inflectional system has been taken, in those varieties that still inflect kin nouns for Person, by a new affix -atye, which was morphologised from an old Dative pronoun. (For the prehistory of Arandic long and short Dative forms, see Koch forthcoming). The original inflectional suffix was demorphologised and became part of the lexical stems. We have here an example where reconstruction of a morphological inflection required us to excavate a form, ‘morphological residue’, from inside a lexical stem. At the same time as answering the question about Proto-Arandic inflection of kin nouns we provide a partial etymology for the kin nouns that have absorbed an erstwhile inflection. (For example, the etymology of Aranda (a)meye “mother” now consists of two parts: the first part of the lexical stem, (a)me-, comes from a widely attested stem *ngama “mother”; the second (and removable) part -ye comes from a Proto-Arandic 1Sg inflectional suffix -ye.)

3.3 Summary of reconstruction of kin noun inflection

In the reconstruction of the inflectional system of Arandic kin nouns, we have seen three different kinds of situations. For the Dyadic slot, represented by a suffix in all modern varieties, we reconstruct a suffix -nhenge; here morphological comparison leads to the reconstruction of morphology. For the 2nd and 3rd Person propositus slots, although most modern varieties have inflectional affixes, we nevertheless reconstruct no affix, but rather phrases containing independent pronouns, of variable order, marking the propositus, which later morphologised to prefixes in Kaytetye and suffixes in Aranda. For the first Person propositus, the suffix -atye found in most of Aranda is analysed as a morphologised pronoun; on the other hand a suffix -ye is found within the lexical stem of some kin nouns of Aranda. This morphological residue is compared to the inflectional suffix of Kaytetye and is reconstructed as the Proto-Arandic suffix marking 1Sg propositus. In Arandic
kin inflection morphological reconstruction has had to look beyond the fillers of slots in a comparative table of affixes; the etymological pathway has led outward to separate words which had became morphologised as well as inward to lexical stems where the residue of inflection eventually came to reside.

4. Arandic complex case markers

The kind of reconstructions we have been expounding are not restricted to kin noun inflection, but are also to be found in the reconstruction of a few complex case suffixes. I consider the Allative and Comitative case forms, which are built on the Dative and Locative respectively.

4.1 Allative

In several varieties of Arandic there is an Allative case marker indicating a meaning “toward” (or something related), which ends in a sequence arle: see Table 15 (for the final ke of E&C Arrernte -karleke, see Section 4.3 below). In each language the first part of the suffix is the consonant that characterises the Dative case marker; the Dative marker is -we or -ke, and there is a regular rule of truncation of e before a following vowel. Hence these suffixes can be analysed etymologically as *Dative+arle. There is some evidence that this analysis can also be justified synchronically. For instance, in E&C Arrerrente, for words whose Dative is marked suppletively rather than by -ke, such as as ikwere “3SgDAT” (vs. ire “3SgNOM”), the Allative suffix consists of just -arleke (Henderson & Dobson 1994:202). Furthermore, in some Antekerrepenh words the arle component of the Allative inflection is separated from the k(e)component (which is also the Dative marker) by another formative; e.g. ke-k-aty-arle “elder.brother-DAT-my-ALL”, alye-k-anth-arle “we.two-DAT-Opposite.Moieity-ALL” (Gavan Breen, pers. comm.). One can therefore conclude that words inflected with this Allative suffix derive historically from Dative-inflected words followed by a postposition *arle. The postposition has been morphologised and is on its way to being reanalysed as part of a complex suffix which includes the earlier Dative suffix. Here the new affix consists of the combination of what was earlier a suffix (morphology) and a separate word.10

4.2 Comitative

Several Arandic varieties have a Comitative case, meaning “along with”. Forms are given in Table 16. Here it will be seen that the form of the Comitative consists of arlenge preceded by either l or ng. In Kaytetye the two variants are conditioned
Table 15. Allative in Arandic

<table>
<thead>
<tr>
<th>language</th>
<th>form</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaytetye</td>
<td>-warle</td>
<td>Allative</td>
</tr>
<tr>
<td>Lower Arrernte</td>
<td>-karle</td>
<td>Destination</td>
</tr>
<tr>
<td>Alyawarr</td>
<td>-warle</td>
<td>Allative</td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>-karleke</td>
<td>“into”, etc.</td>
</tr>
</tbody>
</table>

Table 16. Comitative in Arandic

<table>
<thead>
<tr>
<th>language</th>
<th>form</th>
<th>gloss</th>
<th>environment</th>
<th>comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaytetye</td>
<td>-larlenge</td>
<td>COMIT</td>
<td>after long stem</td>
<td>-le LOC</td>
</tr>
<tr>
<td>Kaytetye</td>
<td>-ngarlenge</td>
<td>COMIT</td>
<td>after short stem</td>
<td>-nge LOC</td>
</tr>
<tr>
<td>Alyawarr</td>
<td>-larlenge</td>
<td>COMIT</td>
<td>-le LOC</td>
<td></td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>-larlenge</td>
<td>COMIT</td>
<td>-le LOC</td>
<td></td>
</tr>
<tr>
<td>E&amp;C Arrernte</td>
<td>-ngarlenge</td>
<td>COMIT</td>
<td>-nge COMIT</td>
<td></td>
</tr>
</tbody>
</table>

by the length of the preceding nominal stem, as are the suffixes that mark Locative case, -le and -nge. In E&C Arrernte -ngarlenge is a rare alternative form of -larlenge; in this language the normal Locative suffix is -le, and the suffix -nge has various locational and temporal functions, including one that overlaps with the Comitative function. (I reconstruct both -le and -nge as allomorphs of the Locative in Proto-Arandic.)

Reconstruction from this comparative data would posit an earlier situation (which is still to some extent reflected synchronically in some varieties) where nominals inflected for the Locative case were followed by a postposition *arlenge. Subsequently the postposition was fused with the erstwhile Locative suffix to form a new complex suffix -larlenge or -ngarlenge. The original separate status of -arlenge is further shown by the fact that -arlenge combines in Lower Arrernte and in E&C Arrernte (here with a variant shape -alenge) with tense-inflected verbs to indicate that the subject of this subordinate verb is different from that of the main-clause verb. In this construction the erstwhile postposition presumably had the function of both nominalising the clause whose verb it was attached to and specifying that the action of this clause accompanied that of the main clause.

4.3 Residues of nominal suffixes in *arle

We have now established the likely earlier existence of two postpositions, *arle which fused with the Dative suffix to form an Allative case marker, and *arlenge which combined with a Locative case marker to form a Comitative case form and
with a tense-inflected verb to form markers of Different Subject. Are these two postpositions related to each other etymologically?

Before answering this question, it should be noted that in Lower Arrernte there is an alternative form of the Different Subject marker on verbs in subordinate clauses; beside the -arlenge forms there are parallel forms in -arlenhe. We should further remind ourselves of the E&C Arrernte “into” form -karleke. We have noted that the initial consonant probably reflects the Dative suffix -ke; the final part of the remainder -arleke, however, also consists of ke, which is identical to the Dative suffix. The existence of variants -arlenge and -arlenhe of the Lower Arrernte Different Subject marker further suggests that the -nge and -nhe were possibly once segmentable bits of these postpositions. The latter may be the -nhe that occurs as a particularising suffix in names, demonstratives, interrogatives, etc. The suffix -nge is probably to be identified with an earlier Locative case marker, which is regular in Lower Arrernte, a phonologically conditioned variant in Kaytete, and a specialised locational-temporal suffix in E&C Arrernte.

The various forms involving the reconstructed postposition -arle are displayed in Table 17. Here we have a kind of proto-paradigm, with *arle followed by four different inflections (including zero). With arle.ke and arle.nge it appears that the residual case suffix included with *arle harmonised with the case of the preceding nominal. This is to be expected in the syntax of Australian languages, where specific locations are indicated by quasi-nominal specifiers that agree in case with the noun whose location they specify (e.g. Kaytete “to the top of the hut” anytwe-warle errwele-warle lit. “hut-ALL top-ALL”). It is common, moreover, that some locational specifiers are zero-marked for the Locative case (e.g. Kaytete “on top of the hut” anytwe-nge errwele_ lit. “hut-LOC top(-LOC)”). Some locational nominals, such as cardinal directionals, are also typically uninflected in their Allative function (e.g. Kaytete ayerrere “in/to the north”). This may be reflected here in the suffixless form of *arle that came to mark the Allative case, in conjunction with a preceding Dative-marked nominal.

At any rate, it appears that our reconstructed postpositions turn out to have the characteristics of nominals. They can be etymologised in terms of a quasi-nominal stem inflected with a number of case suffixes, which have been absorbed into the

<table>
<thead>
<tr>
<th>environment</th>
<th>form</th>
<th>fossilised suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAT</td>
<td>arle</td>
<td>(none)</td>
</tr>
<tr>
<td>DAT</td>
<td>arle.ke</td>
<td>*DAT</td>
</tr>
<tr>
<td>LOC</td>
<td>arle.nge</td>
<td>*LOC</td>
</tr>
<tr>
<td>Tense</td>
<td>arle.nhe</td>
<td>particularising?</td>
</tr>
</tbody>
</table>

Table 17. “Case” forms of the postposition *arle
stem. The particular stem *arle itself still lacks outside cognates which would reveal its earlier meaning.

4.4 Methodological summary

The etymological study of these forms has illustrated a number of methodological points. It has illustrated the process of morphologisation of postpositions to case suffixes. This has involved the complication, not encountered with Person-marking on kin nouns, that the erstwhile separate word may come to be fused with a pre-existing affix (marking Dative or Locative case) to form a new complex affix. It has also shown that an etymological investigation of one case (Allative) may lead to the finding of (partially) cognate formatives in another case (Comitative). Cognate formatives may also be found across inflectional systems – witness the Comitative case markers and the Different Subject subordinate verb markers. Finally it has given another instance of demorphologisation: -arlenge in particular illustrates the absorption of a former case suffix, LOC -nge, into a nominal stem which later developed into a postposition, which in turn was later morphologised into a case suffix.

5. Summary and conclusion

5.1 Summary

We have argued that morphological reconstruction, like lexical reconstruction, must go beyond the comparison of forms that can easily be displayed in comparative tables which simply line up exact translation equivalents. This is because morphological formatives, no less than lexemes, may undergo functional or semantic shifts which leave cognates in non-matching functions in different languages (and sometimes even in the same language). We have illustrated this by examining (a) a shift in the pronominal system of Arandic, where in W Arrernte the 1PlIncDat pronoun nweke shifted its meaning to Singular, and (b) a shift in the verbal inflectional system, where in Kaytetye the Present tense marker -me shifted to a Conditional or Potential meaning. We have also shown that an ‘etymological’ comparison of formatives leads to the reconstruction of current affixes as earlier grammatical words: thus Arandic Person-markers were shown to be earlier pronouns and the complex markers of Allative and Comitative case were shown to incorporate former postpositions. Thirdly, we argued that morphological reconstruction may involve finding erstwhile formatives as fossilised residue in lexical stems. This was illustrated by the -ye of Arandic kin nouns, which continues an earlier 1Sg inflectional suffix. A
fossilised Locative case suffix -nge was also detected in the Comitative postposition arlenge.

5.2 Implications for reconstruction

Failure to sufficiently utilise etymological methods causes various problems. Where cognate material is not recognised, too little grammar can be reconstructed. As a consequence of such inadequate reconstruction, intermediate proto-languages may not be reconstructed for related languages and relevant subgroupings are consequently overlooked. Greater use of etymological methods, on the other hand, holds out the prospect of expanding the amount of data available for comparison and therefore reconstruction through the utilisation of (a) cognate material that has shifted its meaning/function, (b) cognate inflectional or derivational material that has lost its segmentability and been absorbed into a lexical stem, (c) inflected words that have become un analysable particles and perhaps even affixes. These methods will also help comparativists to understand why, within groups of apparently closely related languages, some of the functionally comparable forms (i.e., those occurring in the same ‘slots’ of comparative tables) are not etymologically related; the explanation may involve functional shifts and/or the grammaticalisation of new forms which replace inherited formatives. When such apparent aberrancies are explained, it may be possible to accept the close genetic relationship of a group of languages in spite of divergences in the marking of grammatical categories.11

5.3 Implications for Australian comparative linguistics

A fuller use of the etymological method illustrated here should enable further progress to be made in the reconstruction of Australian languages. Relatively little morphological structure has been reconstructed for Australian languages.12 At the same time doubts have often been expressed about the applicability of traditional methods of reconstruction to these languages. Among the factors scholars have cited as excuses not to attempt more rigorous reconstruction are: the relative uniformity of phonological structures (hence few sound changes), the relatively high degree of lexical diversity (hence few cognates to be found), the prevalence of borrowing and diffusion even of morphology (hence uncertainty about what is related by inheritance within subgroups). Attempts at subgrouping beyond the most obvious sets of languages have tended to be based on lexicostatistics or structural typology, and the goal has even been declared to be misguided (Dixon 2001:88). Scholars who have tried to justify genetic subgroups have tended to focus more on lexicon and phonology than on morphology. Some of the attempts at morphological reconstruction that have been made have tended to rely too much on what I
Morphological reconstruction as an etymological method

have here described as the ‘comparative table’ approach. It is hoped that as more scholars apply more sophisticated methods of morphological reconstruction, in line with the kind of practice that has been established in the well-studied language families, we can expect to see a lot more solid reconstruction of morphology, from which we will be able to draw more reliable conclusions about the genetic relations and prehistory of the indigenous languages of Australia.

Notes

1. Thanks to Gavan Breen, Myfany Turpin, and an anonymous referee for helpful comments on an earlier version of this paper. My comparative research on the Arandic languages was partially supported by the Australian Research Council (grant numbers A58932251 and A59230820).

2. Note that I am using the spelling Arrernte for modern languages, but the older spelling Aranda to refer to subgroups. Note further the distinction between Proto-Aranda and the higher-level Proto-Arandic.

3. Hale’s orthography (a) used i in place of e (to indicate the central vowel) and (b) used no vowel at the end of words, where there is no vowel contrast. (Modern orthographies for some Arandic varieties use e, while others have no vowel. For details on the phonology and orthography of Arandic languages, see Breen 2001.)

4. Relevant Arandic sound changes include: the change of final vowels to schwa, spelled e; loss of initial consonants and sometimes the next vowel; reanalysis of initial rounded vowel plus consonant in terms of a rounded consonant (urle is analysed as erlwe); occasional loss of rounding from consonants (see Koch 1997).

5. By a morphophonemic rule a morpheme-final e is deleted before a following vowel in Arandic languages.

6. -merere is not given in Hale’s comparative wordlist, but is amply attested in more recent data gathered by myself and by Turpin.

7. Kaytetye amenhenge actually refers to the pair ‘mother’s brother and sister’s son’.

8. It is reported by Myfany Turpin (pers. comm.) that some older Kaytetye speakers claim that ameye is also a Kaytetye word.

9. By a contrary tendency, 3Sg-marked forms are sometimes used as general terms; this has been noted in the Lake Nash variety of Alyawarr and in W Anmatyerr, where ‘mother’ is mekwe < me+kwė (Gavan Breen, pers. comm.).

10. There are also Allative suffixes of the form -werne in Arandic languages. It is not yet clear whether these also continue incorporated postpositions or rather reflect the Dative suffix *-ku plus increment.

11. In Koch forthcoming I use the Arandic 1Sg *-y and the postpositional complexes DAT+*arle (> Allative) and LOC+*arlenge (> Comitative) as part of the evidence in support of Proto-Arandic. The Arandic languages are one of the Australian linguistic groupings
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whose genetic status is denied by Dixon, on the grounds that “the similarities are not such as would permit the reconstruction of a common proto-language” (Dixon 2001:86).

12. Studies in Evans (forthcoming), however, show some of the excellent progress that is being made in some of the language subgroups of northern Australia.

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Hale, Kenneth. n.d. *Arandic word list*. Ms, MIT.


Morphological reconstruction as an etymological method


Labovian principles of vowel shifting revisited

The short vowel shift in New Zealand English and Southern Chinese

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Xiamen University, China

1. Introduction

1.1 The Labovian principles

Vowel shifting is a common phenomenon among languages. Three principles of vowel chain shifting were put forward by Labov et al. (1972). Based on the data provided from 36 languages, Labov (1994: 116) classified the vowel shift into three principles:

I. In chain shifts, long vowels rise.
II. In chain shifts, short vowels fall.
III. In chain shifts, the (short) nuclei of upgliding diphthongs fall.
IV. In chain shifts, back vowels move to the front.

The whole picture appears in Figure 1.

However, Labov’s principles are largely based on languages with long vowel shifts. Of the 15 examples listed, only Old Korean (showing Pattern II shift) does not belong to a long vowel system. As exceptions to his principles, he named the following:

(1) the New Zealand front short vowel shift,
(2) The middle Korean vowel shift,
(3) The Parisan chain shift,
(4) The reverse Parisan chain shift.
Then he named a few more examples as paradoxes to his principles, namely

(5) Valais raising (short vowels),
(6) Proto-Yiddish diphthongization
(7) The Great (English) Vowel shift.

1.2 Reinterpretation of Labov’s data and principles: ‘Vowel convection’

If we look at Labov’s data once again, we can easily find that in most languages with a long-short vowel contrast, long vowels change in more or less similar pattern as shown in Figure 2.
This picture is even simpler to understand because it shows symmetry in both front and back vowels. It resembles the scenario of cooking water in a container showing the phenomenon of convection. Hence it is more appropriate to name it as ‘vowel convection’. To summarize, we only have to say “all low vowels rise, high vowels diphthongize and the nuclei of diphthongs fall”. The fronting of some high back vowels in some languages may be interpreted as a form of rising, as front vowels are higher than those at the back. We go on with the analysis of the short vowels.

2. The New Zealand English (NZE) shift

As mentioned above, Labov drew his conclusions mainly from long vowels and viewed the NZE front vowel shift as an important exception to his principles. In NZE, the short front vowels [æ] and [e] rose to [e] and [i], and [i] is centralized as [ɔ]. Labov considers it as a chain shift and he comments:

This clearly violates both Principles III (since a front vowel is moving to the back in a chain shift) and Principle II (since short vowels are rising together). It is possible that there are no general constrain on the movements of short vowels: we must end the survey of completed changes by concluding that it is a possibility. (Labov:1994:138)

However, when we reinterpret the vowel shift patterns also as ‘vowel convection’, we can see that short vowels are also obeying the same rules for long vowels.

The case of NZE is not well analyzed by Labov. If we look at the evolution of Middle English to NZE, we can also see that the back vowels have also undergone similar changes, which are still recognizable through (1) the orthography of English if we compare the pronunciations of the word pairs: golf/wolf, burn/bush, month/blond, and put/cut, and (2) the pronunciation of dialects in Northern England where back vowels are still not raised and centralized, so that the above word pairs are mostly homophones preferring the lower or uncentralized vowels (Hughes & Trudgill 1987). Therefore, NZE should be viewed as a historical product resulting from the shifting of front and back vowels as shown in Figure 3.

This picture is not much different from that of the long vowels as shown in Figure 2, showing that the ‘vowel convection’ rules hold also for short vowels. Interestingly, the NZE short vowel shift is also similar to that which happened in Cantonese.
Figure 3. The short vowel shift in NZE

3. The Cantonese vowel shift

3.1 NZE vowel shift and dialects of Guangdong

When we compare the dialects of Guangdong, the Southern province of China, we see a chain of front vowel shift from a > e > i > e or o in Cantonese. A map showing the location of the dialects given here is shown in Figure 4.

The long and short vowel contrast as found in Latin or Middle English does not exist in Southern Chinese dialects. The so-called long-short vowel contrast in Cantonese is not formed by the same place of articulation with length differences, but only the result of the intrinsic differences in the ‘peripheral’ and ‘inner’ vowels. The peripheral ones are longer and unmarked.

The differences between Cantonese and the neighboring dialects do not only exist for the front vowels but also the back vowels, comparable to the differences between North England English dialects and NZ English. Table 1 shows the back vowel shift from u > u > e or o. This is essentially the mirror image of the front vowel shift.

Table 2 shows the parallel evolution of front vowels found in dialects of Guangdong and NZE.

The evolution of the back vowels is also visible and Table 1 shows the most obvious examples.

After carefully comparing more than 3000 morpho-syllables (recorded in Zhan & Cheung, 1987), the correspondences of pronunciations of some representative dialects in Guangdong are listed in Table 3.

Making use of these data, the evolution of the vowels during the past millennium for these dialects can be worked out. For simplicity, only the vowel changes of
Figure 4. The representative dialects in the Guangdong province of China

Cantonese (Figure 5) and Huizhou (Figure 6) are drawn. Taishan and Meixian are quite similar to that of Huizhou as the sound shift only involves the high vowels.

Here we see that vowel evolution in the Southern Chinese dialects is similar to the short vowel shift in NZE. Everyone of them, as in NZE, obeys the ‘vowel convection’ phenomenon as observed for the long vowels of languages with long-short contrast.

The one taking place in Cantonese is most complicated. The vowel shift in Cantonese is almost complete and is symmetrical both in the front and the back. Comparisons across the dialects showing vowel shifts indicate that the process begins with the high vowels first. Even in Cantonese, the low vowel [a] is still intact. The front vowels also shift earlier than the back ones.
Table 1. Examples of back vowel shifts in representative dialects of Guangdong

<table>
<thead>
<tr>
<th></th>
<th>Meixian</th>
<th>Huizhou</th>
<th>Taishan</th>
<th>Cantonese</th>
</tr>
</thead>
<tbody>
<tr>
<td>乾 (dry)</td>
<td>kɔn</td>
<td>kɔn</td>
<td>kɔn</td>
<td>kɔn</td>
</tr>
<tr>
<td>妹 (sister)</td>
<td>mɔi</td>
<td>mɔi</td>
<td>mɔi</td>
<td>mui</td>
</tr>
<tr>
<td>本 (original)</td>
<td>pun</td>
<td>pun</td>
<td>pun</td>
<td>pun</td>
</tr>
<tr>
<td>官 (official)</td>
<td>kʊn</td>
<td>kʊn</td>
<td>kʊn</td>
<td>kun</td>
</tr>
<tr>
<td>卵 (egg)</td>
<td>ɻn</td>
<td>ɻn</td>
<td>ɻn</td>
<td>ɻn</td>
</tr>
<tr>
<td>罪 (sin)</td>
<td>tsui</td>
<td>tsui</td>
<td>tui</td>
<td>tsɔy</td>
</tr>
<tr>
<td>准 (permit)</td>
<td>tsun</td>
<td>tsun</td>
<td>tun</td>
<td>tsɔn</td>
</tr>
<tr>
<td>間 (ask)</td>
<td>mʊn</td>
<td>mʊn</td>
<td>mʊn</td>
<td>mʊn</td>
</tr>
<tr>
<td>冬 (winter)</td>
<td>tuŋ</td>
<td>tɔŋ</td>
<td>tɔŋ</td>
<td>tɔŋ</td>
</tr>
</tbody>
</table>

Table 2. Parallel development between NZE and Cantonese

<table>
<thead>
<tr>
<th>Gloss</th>
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<th>NZE</th>
<th>Gloss</th>
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<th>Huizhou</th>
<th>Taishan</th>
<th>Cantonese</th>
</tr>
</thead>
<tbody>
<tr>
<td>mass</td>
<td>mas</td>
<td>mas</td>
<td>華 (home)</td>
<td>ka</td>
<td>ka</td>
<td>ka</td>
<td>ka</td>
</tr>
<tr>
<td>pen</td>
<td>pen</td>
<td>pin</td>
<td>片 (piece)</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
</tr>
<tr>
<td>bed</td>
<td>btd</td>
<td>btd</td>
<td>蜜 (honey)</td>
<td>met</td>
<td>met</td>
<td>met</td>
<td>met</td>
</tr>
<tr>
<td>bid</td>
<td>bid</td>
<td>bid</td>
<td>北 (north)</td>
<td>pʰet</td>
<td>pʰet</td>
<td>pʰet</td>
<td>pʰet</td>
</tr>
<tr>
<td>bad</td>
<td>bed</td>
<td>bed</td>
<td>餅 (cake)</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
</tr>
<tr>
<td>him</td>
<td>him</td>
<td>ham</td>
<td>金 (gold)</td>
<td>lit</td>
<td>lat</td>
<td>let</td>
<td>lek</td>
</tr>
<tr>
<td>pin</td>
<td>pin</td>
<td>pin</td>
<td>貧 (poor)</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
</tr>
<tr>
<td>him</td>
<td>him</td>
<td>ham</td>
<td>金 (gold)</td>
<td>lit</td>
<td>lat</td>
<td>let</td>
<td>lek</td>
</tr>
<tr>
<td>pin</td>
<td>pin</td>
<td>pin</td>
<td>金 (gold)</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
<td>pʰiŋ</td>
</tr>
<tr>
<td>time</td>
<td>sɿ</td>
<td>si</td>
<td>si</td>
<td>si</td>
<td>si</td>
<td>si</td>
<td>si</td>
</tr>
</tbody>
</table>

Table 3. Evolution of vowels in representative dialects of Guangdong

<table>
<thead>
<tr>
<th>Middle Chinese</th>
<th>Meixian</th>
<th>Taishan</th>
<th>Huizhou</th>
<th>Cantonese</th>
</tr>
</thead>
<tbody>
<tr>
<td>* /a/</td>
<td>/a/ = a</td>
<td>/a/ = a</td>
<td>/a/ = a</td>
<td>/a/ = a</td>
</tr>
<tr>
<td>* /ε/</td>
<td>/ɛ/ = ɛ</td>
<td>/ɛ/ = ɛ</td>
<td>/ɛ/ = ɛ</td>
<td>/ɛ/ = i, e, ɛ</td>
</tr>
<tr>
<td>* /ɔ/</td>
<td>/ɔ/ = ɔ, u</td>
<td>/ɔ/ = ɔ</td>
<td>/ɔ/ = ɔ</td>
<td>/ɔ/ = ɔ, u, ʊ</td>
</tr>
<tr>
<td>* /i/</td>
<td>/i/ = i, u</td>
<td>/i/ = i, e</td>
<td>/i/ = i, ɔ</td>
<td>/i/ = i, e, ɔ, ʊ</td>
</tr>
<tr>
<td>* /y/</td>
<td>&gt; i, u</td>
<td>/y/ = y</td>
<td>/y/ = y</td>
<td>/y/ = y, oy</td>
</tr>
<tr>
<td>* /u/</td>
<td>/u/ = u, ʊ</td>
<td>/u/ = u, o</td>
<td>/u/ = u, ɔ, θ</td>
<td>/u/ = u, o, θ, ʊ</td>
</tr>
</tbody>
</table>
According to records by missionaries, the main vowel in the Cantonese rimes [om] and [op] was an [a] at the beginning of the 19th century (Bridgeman, 1841), changed to [o] around 1900 (Eitel, 1910), but today the vowel is the central low vowel [v]. This means that the convection cycle was not completed until about a century ago. This is a different case from NZE, in which the back vowels began the convection before the front vowels.
4. Discussion

This study clearly illustrates that there is a language universal for vowel shift. Long vowels and short vowels alike show a regular ‘vowel convection’ pattern which usually begins with high vowels. The Labovian Principles can be readily reduced to the ‘vowel convection’ rule that holds for both long and short vowels. There is no need to explain long and short vowel shift with different principles as put forward by Labov.

‘Vowel convection’ accounts for most of the language data given by Labov. In most languages, long low vowels raise; high vowels break into diphthongs in which the nuclei fall. The example of Czech given by Labov (1994: 124) shows that the long high vowels break into diphthongs first. This also explains why languages like Japanese, Czech, Latin and Maori have only peripheral vowels as no shift had taken place there. In the linguistic history of English, Old English had also distinct long-short contrast pairs but for early modern English when the shift was half complete, no long-short contrast is found in the low peripheral vowels a, æ and u (Görlach, 1997: 43).

In many languages, the distinction between long and short vowels is lost after the long vowel shifting has been completed, for example English and most Southern Chinese dialects. These ‘short’ low vowels also rise, but the high vowel may just fall without breaking. This holds for both NZE and the dialects in the Guangdong Province of South China. Therefore, short vowel shift is not unpredictable as suggested by Labov.

In Cantonese and other Southern Chinese dialects, the more vigorous changes are found in the high vowels, and the lowest vowel [a] remains unchanged. In Czech, the change also begins with the high vowels. The data shows that the vowel shift is a drag-chain in these languages.

Moreover, as ‘vowel convection’ seems to be valid for many languages in the world, we may take this phenomenon into account when we reconstruct proto-languages. Other principles, however, may be working hand in hand with this rule, such as the ‘umlaut’ formation of Old High German which caused back vowels to move to the front, total leveling of front rounded vowels [y] in Old English, or the decentralization of the Min-dialects in the past centuries (Hong, 2001) all of which can affect the vowel convection pattern significantly. This adds irregularities to the ‘vowel convection’ and leads to the diversity of vowel development.

References

Conventional implicature
and language change

The cyclic evolution of the emphatic pronouns
in Romanian

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Introduction

The evolution of Lat. *sibi* “REFL-DAT” in Romanian provides interesting data on
the cliticization of a full word and its transformation into a bound morpheme. It
also shows how homonymic clashes can contribute to the loss of an entire mor-
phemic paradigm and how, thanks to shared pragmatic features, new alternates
may acquire the possibility of carrying the same conventional implicature as the
lost items. The development in question can be summarized as follows:

Stage I. In Old Romanian (16th c.–18th c.) *și*, the reflex of Lat. *sibi* “REFL-
DAT”, becomes an enclitic bound morpheme expressing ‘coreferentiality’. At-
tached to personal pronouns and to deictic expressions (pronouns and adver-
bials), -*și* served to develop an entire paradigm of means denying an expected
non-coreferentiality.

Stage II (18th c.–): The bound morpheme -*și* is restricted to a reduced number
of combinations, namely the emphatic pronoun *însuși* “self”; the pronoun of iden-
tity *aceși* “same”, and the temporal adverbials *acuși* (now.self), *atunceși* (then.self)
“right away”. It is very likely that this limited distribution is due mainly to the am-
biguity created by its occurrence in similar contexts to its homophonous possessive
dative. The pronoun *însuși*, a compound of the preposition *în*, *întru* “in(to)” + *isu*
(cf. Lat. *ipsu*(m) "self, same, he") + -*și*, becomes the standard expression of “self”.

Stage III (19th c.–): The emphatic pronoun *însuși* “self” becomes unpopular
due to its highly irregular morphology and syntactic constraints. Consequently,
other means of expressing an unexpected identity such as *singur* “alone” or *chiar*
“(it is) clear (that P)” tend to replace it thanks to their shared pragmatic values of denial.

1. Markers of an unexpected identity

1.1 The bound morpheme -shi and the emphatic pronouns

In Old Romanian (16th c.–18th c.) şi (< Lat. sibi “REFL:DAT”), with its graphic variants ş, şu, şi, became an enclitic marker of ‘coreferentiality’. The Latin reflexive dative sibi was characterized by two features that could predict its further evolution, namely: (i) as a reflexive, it marked the fact that the same referent was assigned two Roles in the given event (one Role being encoded as the syntactic subject in most cases) and (ii) as a dative, it referred mainly to the Experiencer/Beneficiary and was pragmatically exploited in various ways. According to Ernou & Thomas (1972:184), the Latin reflexive still preserves its etymological meaning of “oneself” (cf. Fr. “soi-même”). Flobert (1975:387–388) defines the Latin reflexive pronoun as expressions of a high degree of voluntarism (“une volonté délibérée de soi sur soi”). Thanks to this value it can co-occur even with the middle (i.e. the forms in -r, so-called deponents, middle or passive forms), which also presupposes the fact that the referent of the subject is both the doer and the undergoer (in Flobert’s words, the form in -r represents a “dédoublement du sujet tout à la fois agissant et agi” – see (1)).

(1) Me nun communor
     me-ACC now refrain.i-MID
  “As for me, I now refrain [myself]”; (Plaut, Ps.: 1131)

Generally speaking, the dative case on its own carries a special pragmatic connotation, since it points to the most salient constituent after the Agent. As Hymann & Zimmer (1976:189–212) have pointed out, dative is more marked as to topicalization and focalization processes than any other oblique case. In Givón’s (1984:139–141) topicalization hierarchy, the semantic role Dative (usually expressed by the dative morphological case) comes immediately after the Agent as the most likely candidate for the topic when the Agent is not specified. These pragmatic connotations must have also contributed to the reinterpretation of the reflexive -shi as a preferred means for reinforcing the emphatic value of the Old Romanian personal and demonstrative pronouns, first in the dative and then in the accusative.

In Old Romanian (16th c.) şi, the reflex of Lat. sibi “REFL:DAT”, could be attached to all kinds of pronouns: personal (luiş “of/to himself”, loruş “of/to themselves”, mineşi “myself”, tineşi “yourself”, noşii “ourselves”, voşi “yourselves”), demonstratives (acelaşi “that.self”, i.e. “same”), and deictic adverbs (e.g. acaşi
“now.self”, i.e. “immediately”, etc.). All these forms co-occur synchronically in the Romanian old texts, so the stages of the spread of -ši as a confirmation marker of coreferentiality have to be reconstructed. Within the framework of the extended model of prototypical semantics, it is possible to reconstruct diachronic semantic links on the basis of the synchronic relations between synonymous lexemes (see Geeraerts 1987; Kleiber 1990:180–181). In our opinion, the only possible reasonable scenario for the evolution of Lat. sibi in Romanian should present the following sequencing:

a. First of all, -ši (šštã) occurred after the dative lui (cf. Vulg.Lat. *illui – cl. Lat. illi “to him”) to express coreferentiality with the subject in contexts where lui alone could be ambiguous. As (2) shows, after a noun, lui could refer to either (i) two coreferential arguments of the same predicate or (ii) the coreferential arguments of two different predicates.

\[(2) \text{tremease elă la satulă lui1 să păca porcii, [...]} \text{și} \]
\[\text{sent him to village his to take.care.of pigs [...] and} \]
\[\text{nemica nu deade lui2 nothing not gave him:DAT} \]
\[\text{“He sent him to his village to take care of the pigs [...] and gave him nothing”. (CÎ:21)} \]

In (2) lui2 refers to an indirect object previously identified (the prodigal son) and not to the subject of deade “gave” [the landlord]. But lui1 (in satulă lui “his village”) could be decoded as being coreferential with the subject of tremease “he sent” only thanks to the knowledge of the information provided by the whole context of the parable. The model for the spread of -ši from dative to possessives must have been offered by the stressed personal pronoun in the dative (lui “of/to him”), which could be either an indirect object or an attribute. The indirect object lui could be also used as an attribute thanks to the persistence of the Latin construction called dativus adnominalis in Old Romanian (see (3)); cf. Fr. fils à papa lit. “son to papa”, i.e. “daddy’s boy”.

\[(3) \text{pentru moarte lui Mihai vodă for death he-DAT Mihai king} \]
\[\text{“for King’s Michael’s death”. (Costin:83)} \]

In (4) the addition of -ši clearly disambiguates the “possessive” lui. The compound luišu refers unambiguously to the same person as the subject:
(4) toate ispravele părăsă -i -se că cu all great.things.the seemed-IMPF him-DAT REFLEX-ACC that with puterea luișă că le- au isprăvită might-the his-REFL that them has.he achieved.

“He thought that he has achieved great things by his own might”. (CÎ:15)

But, as shown by (5), the reflexive possessive adjective său “his-MASC.SG” (cf. Lat. suus) has in fact the same function of signaling co-referentiality:

(5) ori-carele n- are dragoste cătră fratele său whoever not has love for brother his “whoever does not have love for his brother”. (Înv:513)

The difference between luișă and the reflexive adjective său rests on the pragmatic level: as it will be demonstrated below, the compounds with -și (including luișă) deny an expected non-coreferentiality, whereas the reflexive adjective său does not.

b. Secondly, these compounds offered the model for the spread of -și as a marker of coreferentiality to the accusative of the 3rd person (eluși, p(r)e eluși “himself-ACC” (see (6)), eiși “themselves-ACC” (Înv: 508), and even to other persons: mineși “myself- ACC (Înv: 509), sineși ”yourself-ACC”, noiși “ourselves.ACC” (CÎ:18) (see Densusianu 1961.II:118–119). The fact that a dative was preferred over the accusative for attributing the pragmatic function of emphasis to personal pronouns is therefore due to a syntactic factor and not only to its pragmatic exploitations.

The pronominal compounds with -și may refer to a prominent topical constituent that is not the subject of the same clause. In (6), for example, luișă marks the unexpected coreferentiality with the topical Experiencer -i “him-DAT” (functioning as an indirect object):

(6) nu -i vine luișă aciiașu foamea not him-DAT comes him-DAT.self right.away hunger.the “he himself does not feel hungry right away”. (CÎ:26)

The compound forms with -și co-occur frequently with the reflexive pronoun in order to confirm the identity in question, as an emphatic pronoun:

(7) iaste nedereptu de carele e prinsu de vreo boală să is.it wrong for who.the is caught by any sickness that se junghe eluși REFLEX-ACC stab him.REFL “It is wrong for the one who falls sick to stab himself”. (CÎ:23)
According to the maxim of quantity, the shorter utterance (8) would have conveyed the same idea of stabbing, but without the implicature that “according to the ethical principles of the community in question, one is not supposed to do so”.

(8) sà se junghe
that REFLEXIVE stabs-he
“that he stabs himself”

As I hope to have demonstrated elsewhere (see Manoliu 1994:192–194), the emphatic pronouns carry the conventional implicature that denies an expectation that the predicate in question applies to non-coreferential arguments. In symbolic logic terms, the expectation denied in (7) may be formulated as follows:

\[ \exists x \exists y (V(x, y) \cdot \sim (x = y)), \]

where \( \exists \) is the existential quantifier “there is a . . .”; \( x \) would represent the first argument of the predicate “to stab”, the Agent; \( y \) represents the second argument of the predicate “to stab”, the Patient, whereas the symbol \( \sim \) represents the denial “it is not true that”. In other words, there is an Agent \( x \) and there is a Patient \( y \), and the predicate “kills” applies to \( x \), but it is not true that \( x \) is co-referential with \( y \), so the predicate does not apply to two arguments which refer to the same person as both Agent and Patient simultaneously. The meaning asserted by (7) is:

\[ \exists x \exists y (V(x, y) \cdot \sim (\sim (x = y))), \]

i.e. “there is an \( x \) (the Agent) and a \( y \) (the Patient) and it is not true that the predicate ‘to stab’ does not apply to \( x \) as both the Agent and the Patient at the same time.” In brief, the expressions of “self” carry the conventional implicature that denies the fact that the predicate applies to two non-coreferential arguments. So it forcefully confirms the coreferentiality of two arguments of the same predicate. In our opinion, this is the reason behind the label ‘pronouns of reinforcement’. In (9), the stressed reflexive accusative sineși (= sine “him/herself” + -și) doubles the first reflexive \( se \) (direct object), as a strongly emphatic pronoun:

(9) carei se derepează de sineși și ocărâscu
who-pl. REFLEXIVE consider. righteous of self-ACC. self and scolds
pre ceia ce greșescu
ACC those who sin
“Those who think of themselves they are righteous and scold those who sin.” (CÎ:14)

In (10), -și is added even to the possessive adjective săi “his/her/their”; compare (5) and (10):
1.2 -Şi and the identity pronoun “same”

With demonstratives, -şi has a different function, namely it serves to express the meaning of “same”. In order to explain this change, it is necessary to account for the difference between “same” and “self” in pragmatic terms. Let us thus analyze the utterance (11):

(11) s’ au şi greşită, în acelaşi ceas de acelea păcate se-
if has.he even sinned in same hour of those sins refl
au şi pocăiu ...
has.he also repented
“Even if he sinned, he also repented of his sins within the same hour (right away) ...” (CÎ:18)

The expectation of (11) is that one does not sin and repent so quickly. In brief,

\[ \exists x \text{ “he” } \exists y \text{ “hour1” (Vsin (x,y))} \cdot \exists x \exists z \text{ “hour2” (Vrepent (x,z))} \cdot \neg(y = z). \]

The asserted meaning of (11) is thus:

\[ \exists x \text{ “he” } \exists y \text{ “hour1” (Vsin (x,y))} \cdot \exists x \exists z \text{ “hour2” (Vrepent (x,z))} \cdot \neg(\neg(y = z)). \]

In other words, acelaşi “same” denies the expectation that the referent provided by the world of common beliefs for the argument y of the first predicate (“sin”) is not identical with the argument z of the second predicate (repent) and asserts that they are identical.

The difference between “self” and “same” may be thus expressed in pragmatic terms as follows: “self” confirms ‘the identity between two arguments of the same predicate’, whereas “same” confirms ‘the identity between the arguments of different predicates’.

The reinterpretation of the compound of the distal demonstrative + -şi as “same” was favored by the following features of the two components. The value of ‘coreferentiality’ brought in by -şi is conjugated with the focus on the ‘novelty of the referent and/or of the predication’ expressed by the demonstrative. As Kleiber (1992:623), for example, emphasizes:
Si un locuteur utilise une expression indexicale, c'est à dire une expression qui déclenche une procédure de répérage spatio-temporel, c'est qu'il juge que son interlocuteur n'a pas encore le référent à l'esprit (cas du référent nouveau) ou qu'il entend le lui faire découvrir sous un aspect nouveau (dans l'hypothèse où le référent est déjà connu).

In brief, the demonstratives are strong signals of inviting the addressee to identify the referent as a new entity or as an already known entity to which a new predicate applies. In other words, in the presence of a demonstrative, the new predicate may apply either to (a) an argument coreferential with an argument of a previous predicate or (b) a new referent (when the demonstrative is used as an indexical). Such a context is incompatible with the idea of ‘coreferential arguments of the same predicate’. It is then explicable why the addition of -şi (confirming coreferentiality) to a demonstrative (focusing on the novelty of the predicate) will activate meaning (a) and will result in the interpretation of the whole compound as the expression of “same”, which, as already shown, confirms the fact that the argument of one predicate is coreferential with the argument of another predicate. It is perhaps interesting to recall at this point the fact that Lat. ipse “self” was also reinterpreted as “same” when co-occurring with demonstratives (see 2.2.1 below). The invariant pragmatic function shared by both “self” and “same” may be defined as “the denial of an expected non-coreferentiality”.

When co-occurring with the proximity demonstrative (as in acestaşi), -şi is just an additional marker intensifying the cataphoric value of acest “this”:

(12) Déciiia pacea o au legat într- acestaşi chip, că
Then peace.the it-FEM/ACC have made in this.REFL way to
să-i fie într-agiotoriu înpotrivă fiecărui vrăjmaş…
help each other against every enemy
“Then they made peace in this [very] way (= on the following understanding): to help each other against their enemies…” (Ureche:123).

When -uş(u) is combined with temporal deictic adverbials, the confirmation of ‘identity between two moments’ is reinterpreted as ‘immediateness’ (short span of time between successive events): e.g. acmuşă “now.REFL” (13); atunceş ”then.REFL” (14).

(13) că vei acmuşă muri
cause will.you now.REFL die
“because you soon will die.” (Frag. Tod.:31)

(14) şi fu atunceşi chemat Vasilie
and was then.REFL called Vasilie
“and Vasilie was called right away”. (Moxa:183)
Combined with iară “again” as in iarășī “again (and again)”, -și reinforces the meaning of ‘repetition’, because iară alone was on its way of becoming a weak adverative conjunction (comp. (10) above and (15) below).

(15) În deșertu mă laudă, și, ca un mândru, iarășī în
In vain myself praise.I and as a haughty [man] again.self in
deșertu mă laudă!
vain myself.praise.I
“In vain I praise myself, and, as, a haughty [man], I praise myself time and again!” (CI: 14)

2. Stage II (18th c.): the decay of the bound morpheme -și

During the period in question the bound morpheme -și becomes restricted to a reduced number of combinations. This reduction is probably due to the following factors:

a. homonymy with its semi-cliticized reflexive variant ș(ă/i) expressing coreferentiality with the subject, as an indirect object of either the “beneficiary” or the “whole/possessor” (with both alienable and inalienable possessions). The contexts in which the reflexive possessive -ș(i/ă) occurred after nouns constituted a favorable position in which confusions between the possessive and the emphatic -și could arise (see (19) below)

b. the acquisition of the conventional implicatures carried by the compounds of -ș și and other expressions, and hence competition between forms (for example, the pronoun însuși “himself”, as an alternate noun modifier, the adjectival singur “alone”, the adverbial: chiar “even”, etc.).

Let us examine even briefly these concurrent factors.

2.1 SIBI proper: Rom. reflexive dative pronouns

The reflexes of the reflexive dative pronoun Lat. sibi, namely -și, (-ș, -șu), are first and foremost clitics that could be attached to all kinds of words ending in a vowel. In (16), for example, it is attached to the verb and has the function of an indirect object co-referential with the subject:

(16) vine- șă intru mințe
comes self-DAT into mind
“He comes to his senses.” (CI: 21)
The use of the semi-cliticized reflexive variant as the ‘dative of the Whole/Possessor/Beneficiary’ constitutes another factor that undermined the use of the bound morpheme -¸si as a means of reinforcing the pragmatic functions of personal pronouns and deictics. As in other Romance languages, the reflexive of the “whole” could be used in conjunction with the accusative of the parts of the body:

(17) cei ce -¸s tunserà capetele
    those who self-DAT shaved heads.the
    “those who shaved their heads” (CV:230).

But the dative reflexive can also be used for the Beneficiary/Possessor of an alienable possession even when not in contact with the human body:

(18) adura-¸si cărþile
    collected-he self-DAT books.the
    “He collected his books”. (CV:234).

In no Romanian text does the emphatic -¸si/ˇu occur after a noun, because, on the one hand, the noun does not express co-referentiality by itself and, on the other, it would be in competition with its reflexive homophone expressing Beneficiary/Possessor, as shown by (19) and (20).

(19) pre voe -¸sˇu
    on will refl-DAT
    “on his own will” i.e. “knowingly” (Cl:23)

(20) duse in casa -¸s
    took in house refl-DAT
    “He took [him] to his house”. (Moxa:183)

Moreover the reflexive indirect object ˇsi/¸u could also be attached to the subject personal pronoun elˇu “he”. The contracted form elu-¸sˇu then becomes homophonous with the emphatic pronoun in the accusative. Compare (21) below and (7) above:

(21) elu-¸sˇu aduse aminte
    he refl-DAT brought to.mind
    “He remembered”. (Cl:27.)

2.2 Lat. IPSE – Rom. in su¸si, as an alternate reinforcement pronoun

2.2.1 Lat. IPSE

According to Ernout & Thomas (1972:189), ipse “est proprement un intensif, qui s’emploie avec une idée d’opposition latente” (is an intensive proper that is used with an idea of latent opposition). In other words, as any emphatic pronoun, ipse
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may be defined as a signal of “unexpected coreferentiality of two arguments of the same predicate”. Let us consider the following example:

(22) nuntiare iubent regi uelle ipsos ad eum
      inform ordered king:DAT want-INF themselves-ACC to that
      mandata perferre.
      message deliver
      “[The ambassadors] ordered that the king be informed that they wanted
to deliver the message to him personally”. (Curtius:7.8,8)

In (22) the use of *ipsos* (instead of the mere reflexive accusative *se*) in the ‘accusative + infinitive’ construction implies that the ambassadors might have suspected that somebody did not want to let them deliver their message in person. An even more interesting example of the role of *ipse* in denying an expected non-coreferentiality is provided by (23), where *ipsae* co-occurs with a reflexive pronoun:

(23) Valvae [...] se ipsae aperuerunt
      Doors refl-ACC themselves opened
      “The doors opened by themselves.” (Cicero, Diu. 1)

The fact that the doors opened by themselves may not have been considered as an usual phenomenon in the everyday Roman life. According to the maxim of quantity, if such an event would have met the common beliefs, the utterance *valvae se aperuerunt* “the doors opened” would have been the normal choice. But in the given cultural context, characterized by the common belief that an external force has to act for opening doors, *ipse* is a sign of denying the expectation provided by the shared knowledge of a historically determined linguistic community. When combined with other demonstrative pronouns (*hic ipse, iste ipse, ille ipse*), *ipse* is virtually synonymous with *idem* (according to Ernout & Thomas (1972: 191) in such contexts “ipse se rapprochait de idem”). In V. Lat. *ipse* alone could also carry the conversational implicature of *idem* “same” as shown by the following utterance:

(24) non ipsa parte exire habeamus qua intraueramus
      not same side go-INF had.to.we which-ABL went.in.we
      “We did not have to go out the same way we went in”. (Aeth.,4. 5)

In Vulgar Latin, *ipse* started to lose its pragmatic value of “confirming an unexpected coreferentiality”, as shown by its co-occurrence with other “identity markers” such as *-met*: e.g. *egomet ipse* “I.and.nobody else” + “self” or *metipse* “self=self”; cf. the resulting forms in Romance languages: Fr. *même* “self, same, even”, Sp. *mismo* “same”, It. *medesimo* “same, self”.

In spoken Latin *ipse* could replace other demonstratives such as *iste* or *hic* as shown by the corresponding Romance demonstratives: O. Sp. *eje, Occ. eis, O.Pg,
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eiso, Sp. ese, Pg. esse “this-2nd” Aromanian nis, nàs, Istroromanian âns “this” (Puşcariu 1957 s.v. 870). In some areas it then became a personal pronoun (cf. It. essi “they”), then a focalizer pointing to a salient constituent (see (25)) and even a definite article (cf. Sard. su “the”).

(25) Sedens in eadem spelunca, quae in ipsa ecclesia est
   Sitting in the very cave which in that church is
   “Sitting in the very cave, which is in the church (we mentioned above)”.
   (Aeth,123)

2.3 The Romanian emphatic pronoun însuşi

As a consequence of the loss of its illocutionary force of confirming an unexpected identity, the Romanian pronoun însu (deriving from ?in + ipsu) developed into a mere personal pronoun whose anaphoric function was reinforced by the addition of the article -l (< Lat. ille) as in însul, pl. însii (see (26a)) and the compound dînsul (de “from”+ însul (see (26b)). However, its counterpart originating in the demonstrative ille “that” took over its functions as in most of the Romance languages, as shown by the fact that already in Old Romanian, însu had a very limited distribution. It could occur mainly in combination with a preposition: intr-însu “in it-MASC” (CV:248); intr-înșa “in it.the-FEM” (Ureche:94); pre însul “on him.the” (Ureche:95); de înse “of them-FEM.PL” (Ureche: 83), dentr-însa “from it.the-FEM.SG” (Ureche:121); cf. Cont. Rom. intr-însul “in it/him.the-MASC” and intr-înșa “in it/her.the-FEM.”

(26) a. dzise cătrollable- înșii
   said.him to them-PL.the-PL
   “He said to them”. (CV 246)

b. cu dînsii era
   with prep.them-PL.the-PL was
   “with them was…” (Nec:36)

The reflexive -şii was a welcome addition to the pronoun însu for expressing the confirmation of “an unexpected coreferentiality of the arguments of the same predicate”. In Old Romanian, the emphatic însuşi alone could function as a pronoun (see 27), which is unacceptable in modern Romanian (see the corresponding Cont. Rom. expression in (28)):

(27) e însuş intră intru gloată
   and he.self entered into crowd
   “and he himself went to join the crowd”. (CV:230)
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(28) \( \text{şi el } \text{insuşi } \text{întră } \text{in mulţime} \)
and he himself entered into crowd
"and he himself went to join the crowd".

In (29) \text{insuşu} follows a demonstrative subject:

(29) \text{Acesta amu } \text{insuşu } \text{ştie}
This-one now he.self knows
"This one, you see, knows by himself". (CÎ:23)

As an adjective it could also precede its head noun (30).

(30) \text{de-abia } \text{au scăpat } \text{insuşi } \text{craiul spre } \text{Ţara } \text{sa}
hardly has escaped he.self king.the towards land.the his
"even the king hardly escaped to his land". (Ureche:116)

It could also double a personal pronoun:

(31) \text{voi } \text{vedeţi } \text{învivă}
you see.you yourselves
"you see by yourselves". (CV:229)

As has been pointed above, in Old Romanian texts, \text{insuşi} seems to have been the only possible candidate after nouns, since the enclitic -\( \tilde{s}/i \) had the function of a possessive dative (see (19) and (20) above). From nouns, \text{insuşi} must have spread to pronouns, to eliminate also the possible confusion with the contracted form \text{elu } \text{-şi } "he + to.himself" (see (21) above).

3. Stage III: Modern Romanian

3.1 A new paradigm of identity

The rich paradigm of markers of a denied expected non-coreferentiality was reduced to the following combinations, which are also current in contemporary Romanian: \text{acelaşi } "same" (32) and \text{insuşi } "self" (33, 34):

(32) \text{îmi } \text{spune } \text{meru } \text{acelaşi } \text{lucru}
me-DAT tells.he time.and.again same thing
"He tells me the same thing time and again".

(33) (\text{Întrebarea hlui care nu avea decât un răspuns, [...] m-a enervat mai mult})
\text{decât } \text{aşteptarea } \text{însăşi } \text{şi } \text{n-am } \text{răspuns}
than waiting.the itself-FEM.SG and not-have answered
“(His question, which had no answer, [...] infuriated me even more) than the waiting in itself and I did not answer”. (CP:17)

(34) Dar imediat îmi era ruşine de mine însâmi
But immediately me-dat was shame of me-acc myself-fem
“But immediately I was ashamed of myself”. (CP:22)

3.2 Stage IV (18th c.–): The decay of the emphatic pronouns

If acelaşi is still the sole form for “(the) same” (but see Manoliu 1987:421–424 for the tendency for it to be replaced by tot “also” + acela “that”), însuş “self” has a similar fate as its precursors. It becomes vulnerable due to two factors: (a) morphological complexity: it has a highly irregular inflexion which has no match in any other nominal paradigm: (i) its gender and number are marked by a change in the stem vowel: -u/a/i/e/-; (ii) its gender agreement is governed by the gender of the referent in the 1st and 2nd persons and by the head noun in the 3rd person; (iii) moreover, the stress falls on the first syllable and, consequently, the complex final markers are unstressed (see the table of its inflexion in (35)) and (b) syntactic restrictions (for example, însuş cannot occur after a noun in the genitive (see (36)):

(35) Sg. Pl.
1st pers. însumi însâmi înşiine
2nd pers. însuşî însâşi înşivâ
3rd pers. însuşî însâşi înşişi înseşi

(36) şi- a vândut casa lui **însuşî /sâ proprio
self-dat has sold house he-gen himself /his own
“He sold his own house.”

As shown by (36), when determining a noun, însuşî is replaced by a complex construction namely: reflexive possessive (său/sa “his/her”) + the adjective propriu “own”.

Confusions between these forms occur rather frequently in both Old and contemporary Romanian: see O. Rom. (37), where the 3rd person replaces însumi, and (38), where it replaces însuşî (in Gheție1997: 127), or Cont. Rom. (39), where the singular form replaces the plural înseşi (see Iordan et al. 1967:133).

(37) eu înşiş ştiu
1 self-3.pl know
“I myself know” (CV:21)
3.3 Adjectival SINGUR "alone"

The core meaning of singur carries a conventional implicature denying the expectation that an additional participant could be involved in the event. As such, singur may be found already in old texts as a subject emphatic pronoun and as a modifier of either a personal pronoun or a noun:

i. as a subject pronoun:

(40) Cumu singuru grâiaște
    As alone says
    "As he himself says" (Înv.:513)

ii. following a personal pronoun:

(41) sà ducà el singur pre feciorul lui Vasilie vodà în scaurul
    that take he himself on son-the of Vasilie king to throne.the
    Țârii Munteniñi
    Country-gen Muntenia-gen
    "to take himself King Vasilie's son to the throne of the Country of Muntenia" (Costin:89)

iii. preceding a noun:

(42) și încà singuru Hristos grâiaște
    and also alone Christ says
    "and also Christ himself says [it]" (Înv.:535)

In contemporary Romanian, when it functions as a subject, singur is preferred to însuși:

(38) ca însuși tine
    as self-3.sg you-acc
    "as you yourself" (CT:98)

(39) însåși cuvintele acestea...
    themselves-fem.sg words-fem.pl.the-fem./pl these-fem.pl
    "these words by themselves. . .".

Consequently însuși tends to be replaced by other expressions capable of denying an expectation of non-identity, such as singur "alone", "he and nobody else" (<Lat. singulu-), or the confirmation adverbial chiar (<Lat. claru- "[it is] clear [that]"), "even".

As you yourself (CT:98)
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(43) e un om simplu, singur spune, dragă, mie mi-a plăcut mult
is.he a man simple alone says.he dear in my life, I
mai mult in viată paharul decât carte apa
liked more the glass than the book.
"He is a simple man, even he says so, my dear [man], in my life, I preferred
the glass (= drinking) to the book (= learning)." (GA: VP:160)

In (44) singur replaces însuși after the personal subject pronoun ea:

(44) (și nu i-au mai făcut nimic, ce să-i mai facă dacă)

ea singură n -a fost în stare să- și vadă de capul
she alone not -has been capable to refl-dat take.care of head
ei
hers

"(And they didn’t do anything to her, what could they do if) even she was
not capable of taking care of herself". (GA, DE:41)

4. Conclusions

The theoretical interest of the history of the Romanian emphatic pronouns is two-fold:

1. The cyclic evolution of the emphatic pronouns in Romanian shows how
homonymic clashes contribute to the loss of an entire morphemic paradigm
and how, thanks to shared pragmatic features (means of denial, confirmation
of coreferentiality), new analytical expressions may replace the old forms that
become less appropriate for carrying the implicature in question

2. In agreement with the extended model of prototypical semantics, it provides
interesting evidence for diachronic semantic reconstruction on the basis of
attested synchronic variants.

Notes

1. In morpheme-by-morpheme translations we have used the following abbreviations:
   ACC: accusative, DAT: dative, FEM: feminine, GEN: genitive, IMPF: imperfect, MASC:
   masculine, MID: middle voice, REFL: reflexive, SUBJ: subjunctive.
2. For the pragmatic function of the emphatic pronouns defined as a means of denying an expected nonidentity or, in other words, a means of confirming an unexpected identity, see Lakoff 1971; Edmonson & Plank 1978; Martin 1983; Ducrot 1980; Manoliu 1994.

3. For the pragmatic functions of the pronouns of identity Fr. même, Rom. același “same” see Martin 1975 and Manoliu 1997.

4. Cf. It. si lava le mani; Fr. il se lave les mains, Sp. se lava las manos, etc. “he/she washes his/her hands”.

5. For more details concerning the evolution of ipse and other demonstratives in V. Lat., see Abel, 1971.


7. The already compound form dînsul (de "from"+ însu+ l “the”) is rather frequent, especially in Moldavian texts, where it tends to replace the personal pronoun el (< Lat. ille). Nowadays dînsul is considered as a more polite variant of the personal pronoun el (<Lat. illu), especially in Muntenia.


9. In Pușcaru’s opinion (1957:s.v.1596), singur acquired the meaning “self” thanks to its Slavic synonyms.

References

1. Corpora:
   Aeth: Siluiae uel potius Aetheriae Peregrinatio ad loca sancta, ed. by W. Heraeus, 2nd ed. Heidelberg, 1921.
   CT: Tetraevanghelul diaconului Coresi (15611), ed. by Timuș Piteșteanu. Bucharest, 1889.
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2. Secondary sources


The rise of IPs in the history of English

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1. Introduction

My argument, based on Higginbotham's (1985) theta-binding theory, is that the development of infinitival clauses in English is due to the emergence of the functional category INFL within the original nominal structures. The emergent INFL made infinitival clauses possible, just as gerund constructions were made possible via the introduction of D within nominals.

2. Background assumptions

I assume that the mechanism of functional category maturation (Radford 1990; Tsimpli 1996), which was originally proposed for first language acquisition, is also working phylogenetically, although this theory is still controversial. Languages typically start as lexical-thematic, without any functional categories (i.e. DP, TP/IP, and perhaps CP), and the emergence of a new functional category is the characteristic mark of a transition from one stage to the next.

There may be a strong objection against the claim that functional categories can be absent from a human language both ontogenetically and phylogenetically. Perhaps, we can say that phonetic forms may not be associated with the underlying categories. Likewise, children do not know what phonetic forms the relevant functional categories take, although functional categories are present in early child grammars.

Although I admit that my claim is strong and controversial, it is not so implausible to argue that a particular language like present-day English lacks functional categories at a certain stage of development. Not a few researchers reject the strong version of the Structure Uniformity Hypothesis that all clauses in all languages have the same set of functional categories, and prefer the weaker position:
Iatridou (1990), Ernst (1992), Gelderen (1993), Fukui (1995), Kiparsky (1995) and Thráinsson (1996), and so on. Although the details vary with researchers, what follows from their discussion is that different languages may have different functional categories, i.e. the choice of functional categories is subject to parametric variation. As for early child speech, we should note that not only functional categories, but the syntactic phenomena caused by relevant functional categories like the subject requirement are not observed in early child English. If a functional category T/I is present in early child grammars, how could this absence be accounted for?

One may wonder why the author takes up the verbal functional categories such as tense and nominal ones such as articles. It would seem that the semantic categories associated with articles have more in common with aspectual ones. There are a few reasons for this. The main issue of this paper is the emergence of functional categories. Aspect is different from tense in that aspect is not a functional category in the relevant sense. The differences between aspect and tense are supposed to be related to the distinction between lexical (substantive) categories and functional categories with respect to the distinct status in the human mind (cf. Fodor 1983; Smith & Tsimpli 1995). Tense, which heads a phrasal projection in the clause structure, plays important syntactic roles as a functional category as well as denoting the semantic distinctions of time. Meanwhile, aspect perhaps belongs to a substantive category which is part of the mental lexicon. The mental lexicon is not a proper subpart of the language module, but belongs to the central cognitive systems. This conceptual lexicon reflects mental properties which are not purely linguistic, and which do not need to refer to language-specific differences in the syntax proper. If we assume that aspect is part of the mental lexicon, it is easily explained why aspectual distinctions are operative both in earlier languages and in early child languages cross-linguistically. By contrast, it is not clear that functional categories including Tense have a conceptual counterpart in the mental lexicon. I assume that aspect is one of the semantic features which the verb has, given the lack of independent evidence for the presence of aspect projection in the Modern English clause structure.

3. Theoretical assumptions: Higginbotham’s (1985) theta-binding theory

The most relevant theory here is that of theta-binding proposed by Higginbotham (1985). A functional head theta-binds a particular position in the argument structure of its lexical complement. This pertains to both nominals and VPs.

A simple noun like *dog* has an open place in it, and so denotes each of the various dogs. This open place is a referential argument in the argument structure of the word *dog*, which is very different from thematic arguments corresponding to theta
roles like Agent, etc. The referential argument is the ‘reference’ or ‘referentiality’ of that category (cf. Zwarts 1992). We call it R(eferential) role. This position can be discharged either by theta-marking or by theta-binding, which is necessary for an NP to be an argument. That is, a nominal must be specified, for example, as either definite or indefinite for interpretation at LF, although this does not exhaust the referential property of nouns. As argued by Longobardi (1994), NPs are inherently predicative and not referential. Only DPs can occur in argument positions.

(1) a. John is champion.
   b. *Champion called me up yesterday.
   c. *I met chairman yesterday.

The reason why (1b) and (1c) are ill-formed is that the R-role in each NP is not bound. Then, if a D is introduced, an NP can be an argument since a D can bind the R-role. So, in present-day English (PDE), the R position is bound by a functional category D as shown in (2).

(2) DP<1*>
   D
   the
   NP<1>
   N<1> → binding
dog

(The R-argument position 1 is theta-bound by D, that is discharged by theta-binding. The asterisk indicates that the position closes or is discharged. When every theta role in an associated theta grid is discharged, we can say that a constituent is saturated.)

If a given language has overt case morphology, case morphology binds the R-role in an NP (i.e. decides the referential status of a noun) instead of a functional D. This is indeed the case with Old English (OE). Without a functional D-system, morphological case bound the R-role in OE as is shown in (3) (theta-marking).

(3) OE stanum
   NP<1*>->
   N<1>*->
   N<1> Case Affix
   stan um (dative, plural)

In (3) Affix denotes case inflections (in this example -um).
The prediction following from theta-binding is that when case distinctions disappear, a syntactic determiner system is introduced. Looking through the development of the D-system in English, this prediction seems to be correct. As a result of the demise of morphological case distinctions, a functional D-system has become necessary.¹

The question that may arise here is how this approach accounts for languages such as Greek where articles accompany case-marked nouns or Chinese which has neither articles nor morphological case. As for Greek, the sequence of [case-marked articles + case-marked nouns] is explained as an instance of the percolation of case features. Case is first realized on head nominals and percolates onto other elements in phrases. Case realizations on nouns bind the R-role.

Unlike Greek, Modern Chinese (both Mandarin and Cantonese) has neither morphological case nor a determiner system and hence, may appear a counterexample to my analysis. However, once I elaborate a more comprehensive framework for the reallocation of duties between morphology, syntax and pragmatics to characterize the precise nature of functional category maturation, it becomes apparent that this language does not constitute a counterexample. The exact nature of category maturation, i.e. the rise of functional categories, is better described as the reallocation of duties from pragmatics to syntax, and/or from morphology to syntax. The historical development of language is the change in some domain in the trading relations between morphology, syntax and pragmatics. Since Chinese lacks grammatical morphology and any syntactic D-system, pragmatics and semantic factors must play a crucial part in the interpretation.² Although I cannot go into further details here because of space limitations, I suggest that the reallocation of duties can work synchronically too. See Osawa (2000b).

One may also wonder why two systems cannot share the same task, i.e. the binding of the R-role and point out that counterexamples to this argument can be provided by Modern German in which the co-occurrence of a morphological case system and a syntactic D-system is apparently observed. Modern German is said to preserve morphological case distinctions on nouns. However, the fact is that it preserves case distinctions only in limited instances: in most genitive singular masculine nouns like des Vaters, in all dative plural nouns like den Vätern and in a few nouns like Junge, des Jungen, die Jungen. Then, the co-occurrence of a morphological case system and a syntactic D-system might be possible at an intermediate stage of development. That is, although in principle residual case morphology on nouns and a not-yet-established D-system can overlap at a certain stage, there is no language in which both a syntactic D-system and a morphological case system are developing together, that is, there is no language where a syntactic D system is emerging and morphological case distinctions are getting more elaborate than before at the same time.
Concerning the issue of two binders, as pointed out in Higginbotham (1985:560), the impossibility of iterating binders may be related to a prohibition against vacuous quantification (cf. Chomsky 1982); in present terms, one determiner would have to be vacuous, since each is a binder.

Likewise, verbs have open positions in them. This is the position E(vent) of the thematic grid of the verb. The position E corresponds to the ‘hidden’ argument place for events or situations. For example the thematic grid of the verb *see* is shown by <1, 2, E>. The position 1 and 2 will be filled by the usual thematic arguments. For a proposition to be interpretable at LF, the position E must be bound somehow, as a tense specification is necessary for a proposition to be true or false (Higginbotham 1985: 554ff.). We call this the temporal argument of the VPs. In the case of VPs in present-day English, the binder of this position is a syntactic functional category INFL/T tense. Following Thráinsson (1996), I assume that some languages have a fused IP, while others have a TP separate from an AgrSP. I leave this issue open, and I use the term INFL (or Tense) in this paper, since it is not central to the main claim here. In PDE the position E of the thematic grid of the verb is discharged at the point where a VP meets an INFL, where tense is located as shown in (4).

(4)

\[
\begin{array}{c}
\text{IP}\langle E^*\rangle \\
\downarrow \\
I\langle E^*\rangle \\
\downarrow \\
I \text{ VP}\langle E\rangle \\
\end{array}
\]

4. Gerunds

4.1 Non-presence of a D system in OE

The absence of a D in OE nominal phrases easily follows from theta-binding. Case morphology in OE was enough to bind the R-role and, there was no need of a D system. The R-role of NPs in OE was bound by morphological case which was attached to the head nouns instead of a D ((3) above). Indeed there is empirical and syntactic evidence that in OE there was no DP. Based on Giusti (1997), I assume that demonstratives and articles do not constitute a homogeneous category. Only articles occupy a D position, and demonstratives are lexical elements. Although OE had two demonstratives, there were no articles in the proper sense of the word. When morphological case deteriorated in English, a syntactic D-system was introduced to bind the R-role. See Abraham, (1997:29–61) and Osawa (2000a) for further details.
4.2 Non-presence of gerunds in OE

Assuming, according to the DP analysis (Abney 1987; Longobardi 1994), that PDE gerunds are one instantiation of a D system, we can predict the absence of gerunds from OE correctly. The ancestors of gerunds did not have verbal properties at all in OE. They were formed by attaching the suffix -ung, -ing to a verb. The original function of the suffix was to derive feminine abstract nouns from action verbs. These derived nominals inflected just like nouns. The diagram in (5) is one possible structure for OE derived nominals.

(5)

Here each stage represents a synchronic derivational process in OE. The E-position that originates in a verb percolates up to the derived nominal and must be bound for interpretation. At derivational stage 1, the affix ung/ing attaches to a verb, and the whole structure changes into a noun, where ung/ing is a head nominal. Stage 1 might be a possible input to a further operation, but after this stage no further operation on the verb is possible (stage 2), since immediately after the attachment of the affix, the whole structure changes into a noun. This is the reason why verbal properties are not observed in OE derived nominals. The morphological case attached to a derived N can theta-mark the open position or the R-role of a noun. At derivational stage 3, the constituent is saturated. The derivation of these forms is a purely morphological process, with no syntactic implications.4

4.3 The emergence of gerunds

By contrast, since in PDE no overt case marking is available, the R-role must be bound by a functional category; a functional category D binds the R-role. Hence, in the derived nominals in question, any properties of VPs, for instance, containing a subject or an object are available since a PDE gerund cannot have the status of an argument until this theta-binding occurs. The development of gerund constructions in English demonstrates the process by which pure nominal phrases acquire verbal properties. What made this change possible is the emergent functional category D within a nominal phrase.
5. Infinitives

5.1 Introduction

In parallel with the development of gerund constructions, I argue that infinitival constructions having a clausal structure were made possible via the introduction of a functional category, in this case an INFL, into the earlier nominal structure. I assume that PDE infinitives are non-finite clauses, the projection of a non-finite INFL containing the features [-Agr, -Tense], although infinitival IPs may be classified into different types. Due to space limitations, more controversial analyses involving the infinitival clauses in PDE, for example, the assertion that the complement of believe type verbs is a CP (cf. Kayne 1981) or the idea of an expanded CP are not discussed here.

5.2 OE precursors of infinitives

As is well known, in earlier OE, the precursors of PDE infinitives are derived nominals. There are some who assert that the nominal property of ‘infinitives’ in OE is overestimated like Los (1998). However, their nominal origin is clear from the presence of case inflections, although these are reduced to only two, -an (nominative/accusative), and -enne (dative) in the available OE texts.\(^5\) Dative, Genitive and Instrumental case forms are said to have been present in West Germanic. Furthermore, as a nominal, its gender was neuter. These nominal forms were used as arguments of a verb:

(6) Romane blunnen ricsian on Breotene
Romans ceased having power in Britain
“The Romans stopped having dominion in Britain.” (Bede 44. 2)
(Miller 1890)

As is well known, in I can write, can originally meant know, and write (OE writan ) was an object argument of it. When, this derived nominal was used after a preposition to, the dative form of writan, i.e. writenne, was used. Their nominal status is also shown by the fact that there were no passive and perfective constructions available until Middle English (ME).

5.3 The absence of INFL

If they were originally verbal nouns and had case inflections, their R-role, which originated in a verb as an event argument and percolated up to the nominal forms of verbs, is supposed to have been bound by morphological case in the OE period, as observed in the previous sections. Although a nominalizing suffix is fused with
case, the basic structure of the derivation of derived nominals is the same as that of gerunds. This suggests the absence of an INFL in the relevant structure, since there cannot be two binders as discussed in Section 3. That is, if morphological case is present as a binder, there will be no need of an INFL. As mentioned above, the presence of a non-finite INFL in PDE infinitives is well established in the literature. Hence, the conclusion drawn from these facts is that an INFL emerged in the relevant nominal structure.

5.4 The historical facts

I will examine whether this hypothesis that a non-finite INFL was absent in OE and an INFL emerged subsequently, matches the historical facts observed in English.

5.4.1 Syntactic evidence for the non-presence of infinitival clauses in OE

There are a few pieces of syntactic evidence for the non-presence of infinitival clauses in OE.

5.4.1.1 The absence of Exceptional Case Marking (ECM) constructions. In PDE, the following sentence is well-formed:

(7) I believe [IP him to have killed John].

In (7) him is assigned (checked) accusative case by the main verb believe, while it receives a thematic role from the lower predicate. As this example shows, in the ECM constructions the NP following a matrix verb is not thematically related to the matrix verb, and this NP is part of a lower clause, not an object of the matrix verb. If the following NP is part of the matrix clause, i.e. the argument of the verb, the matrix verb should impose selectional restrictions on the NP. However, such selectional restrictions on the NP are not found in the relevant structure. This is clearly shown by the presence of an expletive:

(8) I expect [there to be somebody else].

The presence of expletive there is possible, since this is not thematically related to the matrix verb. This there or the NP following the matrix verb is chosen entirely by the lower clause.

As is well known, these ECM constructions were absent in OE except in direct translation from Latin. Given that the complement to ECM verbs is an instantiation of an INFL, the absence of the ECM constructions in OE is ascribed to the absence of an INFL in the relevant structure in OE.
5.4.1.2 The absence of for NP to V constructions. Further, ‘infinitives’ containing a lexical subject, (i.e. for NP to V constructions) were also absent in OE. In PDE, the following construction is possible:

\[(9) \text{It is intolerable } [\text{CP for } [\text{IP John to get away with this}]].\]  
(Fischer, van Kemenade, Koopman & van der Wurff 2000: 215)

In (9) John is the subject of the lower clause and for is not a preposition but a complementizer, since the lexical entry of intolerable does not allow for a benefactive role (Fischer et al. 2000:215).

In OE, this construction was not possible and the phrase for NP functioned as a prepositional phrase:

\[(10) \text{It is bad for you } [\text{to smoke}].\]  
(Fischer et al. 2000:215)

This absence is also accounted for if we posit that the relevant structure was not a clausal one in OE.

5.4.1.3 The absence of subject-raising constructions in OE. Consider the following examples:

\[(11) a. \text{John seems to be happy.} \]
\n\[b. \text{Tom is expected to win.} \]

It is widely accepted that the matrix subjects in these sentences are raised from the subject positions of the lower clauses by subject-raising.

\[(12) a. \text{e seems [IP John to be happy]} \]
\[b. \text{e is expected [IP Tom to win]} \]

These NPs obligatorily move from the subject positions of the lower clauses into the higher clauses. Hence, the presence of the subject raising constructions provides a strong piece of evidence for the presence of lower IPs. These subject-raising constructions are, however, not found in OE and are rare even in early ME (Traugott 1972; Kageyama 1975). Although some point out that there are a few instances of subject-raising (Allen 1984:464; Anderson 1988:14), the examples they refer to need not contain an embedded clause (see Denison 1993:220).

5.4.2 Possible counterexamples
A possible counterexample to the claim that OE had no embedded infinitival clauses is the presence of Accusative with Infinitive (ACI) constructions, which are found after command, causative, and sense perception verbs. However, care
is needed when we deal with so-called ACI constructions in PDE since different structures are included among them. We have observed that the ECM constructions which have been included among ACI constructions did not exist in OE. Unlike them, in the ACI constructions like (13) the NP following a matrix verb is given a thematic role by a matrix verb *persuade* and this NP is not part of the lower clause but part of the matrix clause. The NP must be thematically related to the NP and hence it cannot be expletive:

(13) a. I persuaded John [to see the doctor].
   b. *I persuaded there [to be somebody else].

The ACI constructions which are found in OE involve this type of verb. The verb is a three-place predicate, (while ECM verbs are two-place verbs, i.e. monotransitive) and the relevant constructions found in OE are analyzed as a double object construction (see Lightfoot 1991; Gelderen 1993:43):

(14) a. he ...let it running forðwip
   he let it running forthwith
   “He forthwith set it running.” (Orm 1336)
   b. swa du dydest minne broðer his god forlætanē
      as you did (made) my brother his God forsake
      “As you made my brother forsake his God.” (ÆCHom. i, 468.21)

(The above examples are cited from Lightfoot 1991:82)

In the above examples, *let* (*lætan*) was originally a three-place verb meaning ‘permit, allow’ and *dydest* (*don*) was also a three-place verb meaning ‘bestow, render’. Then, the two NPs are analyzed as two objects of the predicate.

Concerning perception verbs such as *see* or *hear*, there is no decisive conclusion available yet. They show conflicting evidence of three-place use, although they tend to pattern more like ECM-type verbs (see Denison 1993:168). However, perception verbs are clearly different from ECM verbs in that there is a direct syntactic and semantic relationship between the predicate verb and the following NP in the former (Fischer et al. 2000: 221):

(15) þa geseah heo þæt cild licgan on binne
    then saw she the child lie in manger
    “Then she saw the child lying in the manger.”8 (ÆCHom. I.2.42.24)

In the case of ECM constructions there is no such direct relationship between the verb and the NP. If there is no direct relation between the two, that is, if the speaker does not actually see/hear the NP, the author in OE like Ælfric did not use the (15) type construction, but used a finite clause (Fischer et al. 2000:221):
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(16) ic gesee þæt ðu wylt tæcan
I see that you are going teach
"I see that you are going to teach." (ÆGram 150.160)

The exact nature of OE perception verb constructions is yet to be sorted out. For the moment, I conclude that the presence of these constructions does not constitute a strong counterexample against my position.

5.5 My hypothesis

Although many historical researchers make attractive proposals to account for these facts observed above, most of their attention has been paid to the explanation of the rise of these new constructions in ME. The question of why OE did not have these constructions is not fully addressed. In Fischer et al. (2000), the causal factor which influenced the changes in English most is the fixation of the VO word order with the decay of inflections playing a certain role. However, unlike Pintzuk (1991, 1996), Pintzuk & Kroch (1989) they say that OE is not an OV language but an underlyingly VO language and surface word order variations are derived from it by movement rules. OE surface OV word order is derived by the movement of object and verb. In ME, the surface OV word order disappeared rapidly. This change triggered many phenomena such as changes in infinitival constructions.

The question of what triggered the fixation of the word order remains, however. Furthermore, VO order was already used in OE as they observe, and hence, although it might play an important role, it was not a decisive factor in triggering the changes in ME. The authors cited do give some reasons, however; in a language like OE, Spell Out occurs later than in a language like PDE. In OE, then, movement is overt, yielding the surface OV order. Meanwhile, in a language like PDE, Spell Out occurs rather early, and movement takes place after Spell Out; that is, movement is covert, giving the surface VO order. This difference in the timing of Spell Out is, according to them, following Chomsky (1993), related to a difference in strength of the features of AgrO. In the absence of a concrete definition of strength of features, some circularity is involved in the discussion.

In my view, the fixation of word order, which played an important role in the history of English, is a derived phenomenon rather than the causal factor. Although I cannot go into further details here, it is necessary to seek a further trigger behind it: the rise of functional categories. The claim that the fixation of word order is related to the rise of functional categories is given support from the fact that OE enjoyed a variety of word orders and the fixation of word order actually took place in ME, as is discussed in Fischer et al. (2000).

My hypothesis explains not only why the relevant constructions were absent but also why the new constructions rose in the ME period; due to the decay of
inflections, the open position cannot be bound by morphological case any more. Hence, the binder of the open position or E-position is necessary. Thus, an INFL has been introduced and this INFL binds the E-role of the VP. This emergent INFL made new infinitival clauses possible. It is not accidental that the ME period saw an enormous increase in the number of infinitival constructions, since it is in the ME period that functional categories emerged in the history of English (see Gelderen 1993; Osawa 2000b).

On my hypothesis, the different developments of two non-finite clauses from their precursors is better described in terms of the difference of functional categories which arise within the former nominal structures. In the case of gerund constructions, their nominal status remains constant over the period, since although case distinctions on the relevant nominal forms disappeared, the -ung, -ing suffix remained intact. The necessity of theta-binding, which cannot be met by case morphology any more, triggered the emergence of a D-system, and this D made it possible for a nominal phrase to have verbal properties. One of the possible derivations in PDE gerund constructions is shown in (17).

(17) \[
\begin{array}{c}
\text{DP<1*>}
\end{array}
\]

\[
\begin{array}{c}
\text{D} \\
\text{NP<1>}
\end{array}
\]

\[
\begin{array}{c}
\text{N'<1>}
\end{array}
\]

\[
\begin{array}{c}
\text{V'<1>} \\
\text{ing}
\end{array}
\]

\[
\begin{array}{c}
\text{V<1>} \\
\text{DP}
\end{array}
\]

This is exploited by a phrase like reading a book.

Meanwhile, in the case of infinitival constructions, a nominalizing suffix also served as a case ending. Due to the levelling of unstressed vowels which began well before the end of the OE period, the two forms (i.e. nominative/accusative and dative forms) became identical around 1300, with the final -n lost, and eventually there is no suffix for expressing nominal status. There is then no distinction in form between verbs and ‘derived forms’. Hence, the ‘derived forms’ cannot change into nominals; “V remains V and the infinitival is born” as Los (personal communication) argues. Since they are not nominal, the binder cannot be a D but an INFL. This INFL binds the E-role of the VP. What Los (1999) argues, that is, “infinitives must at some stage have started out as ordinary nominalisations from verbal stems but each (i.e. the one with and the one without to) developed into full verbs at a stage prior to recorded OE”, may not be so far away from what I am arguing here. However, the absence of structures with lexical subjects in OE cannot be fully accounted for without considering the presence/absence of an INFL, as discussed
below more properly. In other words, this strongly suggests the emergence of an INFL in the relevant structure in light of functional category maturation.

Moreover, if I follow Chomsky’s (1995) position that the subject requirement is reduced to the effect of the strong D-feature of T/I (the EPP: the Extended Projection Principle), the absence of ‘infinitives’ containing a lexical subject in OE will follow easily. The ‘subject’ must be associated with the presence of a functional category, and hence, if a certain grammar has no T-system (or I-system), the EPP doesn’t follow. Here, ‘subject’ means an element which occupies the position that is structurally required by a functional projection TP/IP. The non-presence of ‘subjects’ in the relevant structures suggests that there are no functional categories in them.\(^9\)

6. Concluding remark

In this paper I have tried to provide a unified account of the development of non-finite clauses, i.e., it is due to the emergence of new functional categories within the original nominal structures. Although there are remaining problems, like the relation between a non-finite and finite INFL, or the differences between gerund constructions and infinitives etc., this paper has provided a new viewpoint on the development of non-finite clauses in the history of English.

Acknowledgments

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Notes

1. One may argue that singular versus plural distinctions in nouns implies the presence of a D type category, since a number feature is related to a D category. However, the singular/plural forms can be lexical in the way that tooth-teeth are. Since a D system is the locus of binding properties of nominals and pronominals, a further syntactic analysis such as Principles of the binding theory is necessary to argue for a D system in OE. However, in OE personal pronouns were used as anaphors. Then, it was indeterminate whether the object referred to the subject or not in an OE equivalent sentence of “He killed him”. Hence, there was no clear indication of Principle A working as such in OE.
2. Although I admit the presence of an empty D in PDE mass noun phrases and some researchers like Li (1999) assert that there is an empty D in Chinese, I do not assume an empty D system in Chinese. First, there is no morphological evidence for the presence of empty determiners. Second, it is implausible to assert that a language has a certain invisible category, which has no visible counterpart at all. In the case of languages which allow an empty D, the distribution of the empty D is subject to the lexical government constraint, similar to that constraining empty categories. However, there is a parametric difference here, as Longobardi (1994: 616) argues, since in PDE the licensing condition for an empty D may be relaxed.

3. One may wonder why demonstratives like this/that are classed as lexical categories, although it is true that they are not articles. In fact, there is no agreement about the status of this/that even in Modern English among the researchers. For example, Giusti (1997: 110) only suggests that the demonstrative is base-generated in a specifier which is located lower than D. However, there are a few pieces of evidence for the nominal status of OE demonstratives: they were fully inflected just like nouns; they were used as demonstrative pronouns without the company of nominals. They made an important semantic contribution of their own. All these properties are against the defining features of functional categories pointed out by Abney (1987).

4. The derivational process described in (5) is a morphological one, that is, the addition of the affix -ing to a verb is done in the lexicon, as Baker (1985) suggests for -ing-of constructions in PDE. Then, the arguments of original verbs are optional and they are expressed in the same way that ordinary nominal phrases are constituted as shown below:

\[
\text{seo} \text{ feeding } \text{data} \text{ sheepe} \text{ (genitive plural)} \text{ (CP 43. 5)}
\]

5. There is an argument that the category case should be considered as a functional head. For example, Giusti (1995) argues that case and articles are two instances of the same category, namely, functional nominal head, FP, in her terms. However, I suggest that functional categories are a syntactic device, and their presence in a given language has a great implication in syntax. Hence, the reliable evidence for the presence of a functional category is the syntactic effects caused by it. What syntactic effects does that functional projection have? Case inflections in OE are lexical in nature. I assume that morphology can be dissociated from syntactic representations.

6. The OE -an form was traced back to -onom/anam, which was nominative/accusative form in Germanic. Then, -an form was originally a singular accusative form.

7. The sequence followed by the perception verbs may be analysed as a small clause since a small clause can behave like an ECM construction without a functional category INFL. However, there is a heated debate about the issue of small clauses and the sequence [NP XP], and the notion of small clauses are still under reformulation. The small clause analysis may be extended to other constructions such as causative verb complements and double object constructions (Stowell 1995). If, as Rapoport (1995:169) argues, NP receives a theta role from a complex predicate formed by the main verb and the XP, then, the theta role of his God in (14b) is supposed to be assigned by the complex predicate formed by the matrix and a derived nominal, although details are yet to be refined. Furthermore, Contreras (1995: 136)
proposes that a complex-predicate analysis is limited to nominal and prepositional small clauses. This is not incompatible with my analysis, since the XP has a nominal status since this is a derived nominal as I argue. However, this extension of the notion of a complex-predicate needs justification. See Stowell (1995), Contreras (1995) and Rapoport (1995) for further details.

8. There is a semantic difference between “X saw Y lie down” and “X saw Y lying down”. The example is directly cited from Fischer et al. (2000:221). I have left the example as it is.

9. This topic, i.e. the absence/presence of a finite INFL in OE is a big issue beyond the scope of this paper. In light of the maturation theory, I suggest that a finite INFL might be absent in OE. The temporal interpretation can be done otherwise without a functional category INFL/Tense, and the related syntactic phenomena involved in a functional category INFL were absent in OE. See Osawa (2000b) for discussion. Some may assert that subjects are missing due to the failure of nominative case assignment. However, does this account for other historical facts observed here? If so, why are the raising constructions not observed in OE?

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The rise of IPs in the history of English


From subject to object
Case studies on Finnish

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1. Introduction

In Finnish, the syntactic reanalysis from a complementation structure into an impersonal compound verb form tends to involve a shift from a subject to an object. Therefore, there are several objects in Finnish that have originally been subjects. Some well-known examples are the earlier subjects of the passive compound tenses and modal verbs of obligation (see Ikola 1959; Harris & Campbell 1995:91; Setälä 1914:12; Saukkonen 1965:124–131, 143–144; Itkonen 1975; Laitinen 1992, 1997).

In this paper, I will discuss the subject-to-object change by looking at two verbal constructions in Finnish which are called obligation construction (on teh-tävä “must be done”) and the possibility construction (on teh-tävissä “can be done”). In present-day Finnish, these constructions are modal passive compound forms consisting of an auxiliary verb olla “to be” and the passive form of the present participle. In the possibility construction, the participle is in the plural inessive case. They are former copula constructions with a subject and an adverb- or an adjective-like participial complement. Once the copulative source construction was reinterpreted as a passive form, the original subject gradually turned into an object of the passive form.

In former studies (e.g. Ikola 1959), the shift from a subject of the copulative source construction to an object of the present-day obligation construction has been illustrated by fabricated examples such as the following:
(1a) and (1b) imply a maximum shift from subject to object regarding the coding properties. The subject in example (1a) illustrates the prototypical subject in Finnish: it is in the nominative case, pre-verbal and it triggers agreement in the verb. After the pattern in (1a) was reanalysed as a passive, such as (1b), the subject and verb no longer agree in number or person. Instead, the original subject has acquired the case-marking typical of the Finnish object.

In this paper, however, I will argue that the shift from subject to object has been rather uncomplicated. With the data from real usage of obligation and possibility construction, I will show that the examples (1a) and (1b) do not illustrate the real change from subject to object. Rather, the original subject of the source construction already shared many properties of the present-day object of the passive construction. The main focus of this paper will lie on the restructuring process of the obligation construction since its older subject has already received a marking typical of a Finnish object. First, a brief discussion of the form and function of the present-day obligation construction. I will then go on to point out the preconditions of a syntactic reanalysis. Finally, I will compare the restructuring of the obligation construction to that of the possibility construction which is currently going through a parallel process.

2. The form and the function of the obligation construction

The obligation construction consists of an auxiliary olla “to be” and the passive form of the present participle, as in (2):

(2) Työ-t on teh-tävää
job-nom.pl be-3.sg.pres do-pass.pres.partcp.nom.sg
“The jobs must be done.”

The construction is fully productive, that is, it can take any verb. In modern Finnish, the auxiliary of the obligation construction is always in the 3rd person singular form and the participle in the nominative singular case (henceforth, the nominative case of the participle is not glossed in the morphological gloss lines
of the examples). Thus, the form of the obligation construction parallels that of passive compound tenses in Finnish, as (3) shows.

(3) Työ-t on teh-ty
    job-nom.pl be-3.sg.pres do-pass.pass.partcp.nom.sg
    “The jobs have been done.”

The Finnish passive differs from the canonical passives because it does not have an overt or logical subject (Shore 1988). Unlike other passive forms, the obligation construction, however, may contain a subject-like argument, for the obliged agent can be expressed by the genitive, as in example (4). These types of subject-like arguments in genitive are typical for Finnish non-finite verb forms in general (see e.g. Jaakola 2001; Sands & Campbell 2001).

(4) Minu-n on teh-tävä työ-t.
    I-gen be-3.sg.pres do-pass.pres.partcp job-nom.pl
    “I must do the jobs.”

Note, however, that obligation constructions without explicitly marked agents are perfectly acceptable, as shown by example (2). They are also more common than the obligation constructions with an overt agent. If no overtly marked agent, or subject, is present, the obliged agent of the construction is non-specified person since Finnish passive implies human agents (see Shore 1988).

The function of the obligation construction is to express non-epistemic modality. In Palmer’s (1986) terms, the construction denotes dynamic or deontic obligation, dynamic obligation being somewhat more typical for colloquial usage and deontic for standard written Finnish. That is, in the vernacular, the construction expresses rather strong obligation or even physical necessity, as in (5) and (6), whereas it is weaker in standard Finnish denoting, for example, norms and desirability, as in (7) and (8):

(5) minu-n-kin on melkein aina maat-ta-va
    I-gen-part be-3.sg.pres almost always lie-pass.pres.partcp
    seljä-llä-än
    back-adess-poss
    “I must almost always sleep on my back.” (dialect of Häme)

(6) poja-t sano-vat jot leikäri-i se ol
    son-nom.pl say-3.pl.imp that doctor-ill it be-3.sg.pres
    lähet-tä-va
    leave-pass.pres.partcp
    “The sons said that I must go to the doctor’s.”
3. The restructuring process of the obligation construction

As noted by Haspelmath (1994:162) non-past passive participles commonly have modal meanings. Finnish shows this tendency, for the Finnish present passive participle also has modal meanings in positions other than as part of the modal verbal constructions. Therefore, even the copulative source condition may have been modal. According to my hypothesis, certain modal participles occurred together with the copula frequently enough for the obligation to be interpreted as a function of the whole construction instead of the complement alone. That is, the former adjective-like participial complement became understood as the main verb of a passive compound form. Consequently, the NP that had been subject gradually lost its subject properties and became interpreted as the object of the passive form.1

The reanalysis into a passive broke up the relation between the original subject and its complement. As a result, the subject was no longer an obligatory part of the construction and thus, it became possible for the construction to take intransitive verbs as well. In other words, while the copulative source construction could be formed only from transitive verbs, the present-day passive form – the obligation construction – can take any verb.

To discuss the preconditions of the shift from subject to object in more detail, let us turn back to examples (1a) and (1b) presented in the introduction. As mentioned, these examples serve to exemplify the loss of morphosyntactic coding properties of the subject most clearly. The subject of example (1a), repeated here, illustrates the most explicitly marked subject in Finnish.
From subject to object

(1) a. Te olette pelaste-tta-va-t
you-PL.NOM be-2.PL.PRES save-PASS.PRES.PARTCP.PL
“You have to be saved.”

The prototypical subject in Finnish is pre-verbal, it is in the nominative case and it agrees with the verb in person and number (e.g. Hakulinen 1986; Helasvuo 2001). The reference of the subject is usually human, although, as noted by Helasvuo (2001: 86), this holds true only with the subjects of transitive clauses. Furthermore, the number agreement is most explicit in the 1st and 2nd persons, because in the colloquial system, the 3rd person singular form is used with plural subjects too. (Helasvuo 2001.) Thus, the subject marking is most explicit in the 1st and 2nd person.

In addition, the personal pronouns are also marked most explicitly when functioning as objects. Only the personal pronouns have special object-marking forms of the accusative, as teidät in (1b), and only the personal pronouns are in the same accusative form regardless of whether they function as an object in an active or a passive clause. Otherwise, the case alternation of the objects in Finnish is seemingly complicated. The objects of the active clauses, for example, can be in the partitive or in the case called accusative (although the present-day form of it parallels the genitive). Plural objects can be in the nominative. The objects of the passive forms are either in the partitive or in the same case as the subjects of the active clauses, that is, in the nominative. (For a detailed explanation, see Helasvuo 2001.)

Hence, if illustrated by personal pronouns, the shift from subject to object seems to involve changes in the case-marking as well as loss of both person and number agreement in the verb. The real shift, however, has been far less significant than implied by (1a) and (1b). On the basis of the extensive data from both standard and colloquial language, it appears that the source construction has been mainly in the 3rd person. My data shows virtually no examples of the 1st or 2nd person (or even personal) subjects of the source construction, that is, examples such as (1a) have not really existed. Rather, the source construction has been more like the following examples from Old Finnish and the spoken dialects of Finnish:

(9) Erinomaisest ne synni-t/ iotca julkisest teh-dy-t
especially they sin-PL which publicly do-PASS.PAST.PARTCP.PL
owat eli erinomaisest waiwa-vat
be-3.PL.PRES CONJ especially trouble-3.PL.PRES
ihmis-t on tunniste-ttawa-t.
human.BEING-PART be-3.SG.PRES confess-PASS.PRES.PARTCP.PL
“Especially the sins which have been done in public; that is, the ones, which particularly trouble humans, must be confessed.” (Old Finnish)
In these examples, the copula is in the singular and only the plural participle agrees in number with the subject. As mentioned, in colloquial Finnish the verb is usually in the 3rd person singular form also with plural subjects and thus, the number agreement has not been particularly strong in the real source constructions. Furthermore, the referents of the subjects of (9)–(11) are inanimate entities. For this reason, it is only natural that personal pronoun objects such as in example (1b) are extremely rare in present-day usage. Only two examples of such an object appear in my data of over 2000 examples from standard Finnish. Moreover, they are both 3rd person pronouns:

(12) **Häne-t on** saa-tava myös seuraava-ksi
    he-acc be-3.sg.pres get-pass.pres.partcp also next-transl
    pääministeri-ksi.
    prime minister-transl
    “We must/ should get him as the next prime minister as well.”
    (newspaper text)

(13) **Kun sanoin että häne-t on**
    when say-1.sg.past that he-acc be-3.sg.pres
    hoidettava pois tie-ltä, ei juolahtanut
    take.care.of-pass.pres.partcp away way-abl cross-3.sg.past.neg
    miele-enn-kään että he otta-isivat ja
    mind-illat.poss.neg.part that they take-3.pl.cond and
    tappa-isivat häne-t
    kill-3.pl.cond he-acc
    “When I said that he must/ should be got rid of, it never entered my mind that they would kill him.” (newspaper text)
That is, the explicitly marked objects, such as in examples (12) and (13), are atypical objects of the obligation construction. More typically, the object is in the same case as other objects of passives: either in the partitive or in the nominative. No change in the case-marking was thus involved, since the original subject was also in the nominative.

In sum, the example (1b) does not illustrate a typical present-day obligation construction nor does (1a) illustrate a typical source condition. Rather, the original subjects have greatly resembled the typical Finnish object from the very beginning of this development. Syntactically, the change from a subject to an object meant only the loss of a number marking in the verb and the participle. In the colloquial language, the change was even smaller since the copulative verb was usually in the 3rd person singular.

A similar observation about the contexts in which an earlier subject was reanalysed as an object has been made in a study proposed by Laitinen (1992, 1997). Laitinen’s study is concerned with the modal verbs (or auxiliaries) of obligation in Finnish, such as *täytyä* “must”. These verbs do not allow person or number marking and they have no passive inflection. The morphological form of the verbs is 3rd person singular. According to the commonly accepted reconstruction, developed in Finnish linguistics during the past hundred years (e.g. Setälä 1914:12; Ikola 1959; Saukkonen 1965:124–131, 143–144; Itkonen 1975), the modal development of these verbs began when they started to take transitive infinitival complements. As the lexical meaning of the verb was bleached and the verb received a grammatical reading, the original subject became analysed as the object of the complement. Consequently, the number and person marking in the verb was gradually lost. On the basis of extensive data from spoken Finnish, Laitinen has, however, noted that the source verbs which develop into auxiliaries of obligation have also favoured 3rd person singular subjects which refer to inanimate or non-personal entities. Thus, the verb was in the 3rd person singular from the beginning of the modal development, as sketched in (14). The simplified example (14) shows that the reanalysis from a subject to an object did not necessarily involve any changes in the surface of the original subject or the verb:

(14) Vilja *täytyy* leika-ta > Vilja corn-nom.sg [*täytyy leika-ta*]
corn-nom.sg ripen-3.sg.pres cut-1.inf > corn-nom.sg

“Corn has ripened enough to be cut.” > “Corn must be cut.”

Presumably, reanalysis from a copula construction into a passive perfect (as discussed by Ikola 1959:43–45 and Harris & Campbell 1995:91), has arisen in constructions with inanimate, 3rd person subjects, too. This is indicated by the fact
that the auxiliary of the passive perfect is also in the 3rd person singular, as shown by example (3) above.

4. The restructuration of the possibility construction

Thus far I have shown that the 3rd person inanimate subjects in a complementation structure often become objects of an impersonal verbal form as a result of reanalysis. This view is further supported by looking at the present stage of the possibility construction although there are some differences due to the morphology of the main verb of the possibility construction.

The form of the possibility construction is similar to the obligation construction, as can be seen from the following example:

(15)  Työ on tehtävissä  
    job.nom.sg be-3.sg.pres do-paSS.pRES.partc-pl-INESS  
    “Job can be done.”

In the possibility construction, the present passive participle is in the plural inessive case. The plural form in the participle may seem unexpected at the first sight since there is no plural present to trigger it. The plural here, however, does not indicate agreement but it functions as a marker of the former adverbial status of the main verb. In addition, because of the plural form, a more literal reading of the example (15) is available. Literally tehtävissä means “within the things that are possible to do”. The literal reading strengthens the construction’s function which is to denote root possibility.

As the other compound passive forms, the possibility construction is also a former copula construction. However, because of the local case of the participle, the complement was not an adjective but a locative adverb. Therefore, the grammaticalization into a modal construction has been slightly more complicated. The modal development has started from a few adverbs whose morphological structure has become productive (for details of such a grammaticalization process, see Salminen 1997).

In standard Finnish, the auxiliary of the possibility construction usually agrees with the subject in number and person, as illustrated by example (16):

(16)  Työt o-vat tehtävissä  
    job.nom.pl be-3.pl.pres do-pass.pRES.partc-pl-INESS  
    “Jobs can be done.”

Example (16) shows that, although the subject is semantically the patient of the possibility construction, it is still marked as a subject through agreement in nor-
mal standard Finnish. However, the subject of the possibility construction parallels the original subject of the obligation construction. The referents of the subjects are typically inanimate, and thus the auxiliary is mainly in the third person form. Personal subjects are very rare. My data of some 500 examples from both standard and vernacular Finnish, show only three examples of personal subjects. An example from vernacular Finnish is (17) and from standard Finnish (18).

(17) *minä olin* sua-tav-i-ssa *voan*
    I be-1.SG.PAST get-PASS.PRES.PARTCP-PL-INESS only
    “Only I was available.” (dialect of Savo)

(18) *Vain me aikuise-t* ole-*mme* näin helposti
    only we adult-NOM.PL be-1.PL.PRES so easily
    höynäy-tettäv-i-ssä.
    trick-PASS.PRES.PARTCP-PL-INESS
    “Only we grown ups are so easily tricked.” (newspaper text)

As I’ve mentioned few times already, the subjects are marked weaker in the 3rd person since 3rd person subjects do not agree in number with the verb in the colloquial Finnish. Therefore, the auxiliaries of the colloquial possibility constructions are for the most part in the singular form, even though there is a plural subject, as in (19). According to the norm, the auxiliary should agree with the subject but there are some examples of lack of number agreement even in the standard Finnish, such as (20). The existence of these examples show that the subject is no longer necessarily analysed as a subject.

(19) *Ne kun on* käs-iin kerät-täv-i-ssä
    they CONJ be-3.SG by.hand collect-PASS.PRES.PARTCP-PL-INESS
    “One can collect them by hand.” (dialect of Häme)

(20) *Yhtä nopeasti on* lipu-t
    as fast be-3.SG ballot-NOM.PL
    jae-ttäv-i-ssa kymmenen kasa-an.
    divide-PASS.PRES.PARTCP-PL-INESS ten-ILL stack-ILL
    “The ballots can be divided into ten stacks [as fast as into two or three stacks].” (newspaper text)

The main difference between the subjects of the possibility construction and the original subjects of the obligation construction is that the possibility construction allows the subjects to be in the partitive case, as in (21):
The partitive case is usually typical for a Finnish object. Nevertheless, some partitive arguments have been regarded as subjects in Finnish linguistics, although very atypical ones. This kind of partitive subject typically occurs in the so-called existential constructions which consist of a locative element, copular verb and a subject, which can be in either the nominative or partitive case. The partitive subject designates an indefinite quantity and can be used with mass noun or plural forms. The word order in the existential clauses is usually fixed but there are some examples of the partitive subject preceding the copula. (For more detailed discussion of existential constructions, see e.g. Vilkuna 1989:155–160; Helasvuo 2001:97–101.) Because of the inessive case of the main verb, the possibility construction formally correspond to an existential construction.

Thus, since the subject of the possibility construction can be in the case which is typical for an object in Finnish, it is even more object-like than the original subject of the obligation construction. Nevertheless, it has not yet received a proper marking of the Finnish object. This is clearly shown by the personal pronoun subjects in examples (17) and (18): if they were analysed as objects they would be in the accusative form.

5. Conclusion

To conclude, the shift from a subject to an object is not as striking a change as it may sound at first. The shift began in specific contexts with inanimate third person subjects and the loss of subject properties concerned only the number marking in the verb.

This kind of reanalysis from subject to object can be seen as a necessary part of the grammaticalization process of impersonal compound forms in Finnish. The Finnish impersonal forms tend to develop out of complementation structures with a subject and its infinitive verbal complement. Therefore, the complement in the source construction must be transitive. It is only after the subject has been analysed as an object that the construction can become fully productive; that is, it can be formed from intransitive verbs as well.

Thus, the possibility construction can be regarded as less grammaticalized than the obligation construction. Semantically, the possibility construction has been analysed as a compound verbal form. Nevertheless, it has not received the syntactic
form of the passive compound form. However object-like the semantic patient of
the construction may be, it is still marked as a subject in the verb. Therefore, the
construction cannot be formed from intransitive verbs; that is, it is not yet fully
grammaticalized.

Abbreviations

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reviewers for the detailed comments and suggestions to improve this paper.

Notes

1. This did not happen until modern Finnish, for the present-day object was commonly
marked as a subject on the 19th century, as shown by the following example from a Finnish
newspaper of the year 1847:

(1) *Kaikki sana-t ja sanasparre-t o-vat*

    *all word-nom.pl and expression-nom.pl be-3.pl.pres*
    *käänne-täävi-t ruotsi-ksi*.
    *translate-pass.pres.partcp-pl swedish-transl*

    “All the words and expressions must be translated into Swedish.”
Heli Pekkarinen

References


Meaning change in verbs
The case of strike

Nick Riemer
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1. Introduction

It is now well understood that semantic change proceeds by way of an intermediate stage in which old and new meanings coexist polysemously (Traugott 1986; Sweetser 1990; Wilkins 1996; Evans & Wilkins 2000). Furthermore, it seems likely that the vast bulk of many lexemes’ diachronic semantic behaviour consists in reconfigurations to the set of polysemous meanings rather than in clear linear changes from an old meaning to a new one. An account of historical semantics that does not privilege such reconfigurations is therefore ignoring the majority of its own subject matter. The past fifteen years have produced significant results in the study of the diachronic behaviour of many types of word. But these studies leave vast tracts of the lexicon unexplained by any theory of diachronic change, domains containing ordinary core vocabulary which fails to show any long-term historical directionality. This vocabulary lacks any propensity to be grammaticalized into function words (Traugott & Hopper 1993), and fails to exemplify ‘subjectification’ (Traugott 1989), or to name human cognitive or sensory processes (Viberg 1984; Sweetser 1990; Evans & Wilkins 2000), which seem to have a particular propensity to participate in meaning change. Because items like this account for such a huge proportion of the lexicon, the task of understanding how their meaning changes is especially urgent.

In (1) I advance a hypothesis about the polysemies acquired by ‘percussion and impact’ (P/I) verbs in English, some of which are listed in (2). This typology analyses the polysemies and lexical alternations taken on by P/I verbs in terms of four extensional procedures, three of them metonymic and one metaphorical. In a field where the initial characterization of the facts is as theory-dependent as it is in historical semantics, much explanatory value is achieved in foregrounding the
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methodological principles and assumptions of the analysis. This article therefore discusses the principles that inform the typology, and then presents an exposition of its application to the English verb *strike*.

1. Hypothesized types of semantic extension:
   1. Metaphorical application of the core verbal meaning (*m*)
   2. Metonymic extension to the effect of the action of the verb (*m/effect*)
   3. Metonymic extension to the context in which the action of the verb occurs (*m/context*)
   4. Metonymic extension by selection of a constituent of the verbal event (*m/seLECTION*)

2. Some English Percussion/Impact (P/I) verbs: *bang, beat, bump, hit, kick, knock, slap, smite, stamp, strike, thrash/thresh, thump*

2. Methodological and interpretative principles

The typology in (1) calls on only a small number of categories: this section describes the four features of the analysis which facilitate this parsimony. These are its focus on the process rather than on the outcome of semantic extension, its account of metaphor, the recursiveness of the means of extension, and the postulation of so-called ‘postcategorial’ means of extension.

2.1 Means before ends

Like many investigations of semantic change, semantic extension and polysemy, this model takes a particular denotationally defined domain within the lexicon as its field of analysis: the domain of P/I. But in contrast to a number of accounts (e.g. Viberg 1984; Sweetser 1990), the denotations and domains of target meanings do not directly figure as the heuristics according to which the extensions are analysed. Instead, the analysis is based on the processes of semantic extension which ‘deliver’ the source P/I meaning into the extended domain.

The typology therefore does not use denotational categories of extension like ‘fatal injury’ or ‘motion’ (to name just two) as the main instruments of the analysis. These meaning areas are both ones into which P/I vocabulary is frequently extended. (3)–(6), for instance, are examples of the motion extension.

3. 1890: *They struck the river within a day’s ride of Rainbar.*
   (OED *strike* 68a. vt come upon, reach in travelling) (*m*)
(4) 1718: *Their trampling feet Beat the loose sands.*
   (OED *beat* 3a. *vt* said of the action of the feet (beat the streets, beat a path), hence open up, prepare a way.) (m/context)

(5) 1587: *And as enamored wights are wont, He gan the streetes to beate.*
   (OED *beat* 3a. *vt* said of the action of the feet (beat the streets, beat a path), hence open up, prepare a way.) (m/context)

(6) 1719: *A sudden pain...struck across my heart.*
   (OED *strike* 51a. *vi* move quickly, dart, shoot) (m/selection)

But the existence of a domain-based regularity between P/I meanings and some other domain into which P/I is frequently extended may be misleading. For every semantic domain, like ‘motion’ or ‘fatal injury’ into which P/I senses are commonly extended, there are many more of which P/I is only very rarely an exemplar. Attempts to discover any satisfying regularity between P/I and domains into which P/I is extended therefore soon falter. A heuristic which seems to offer much greater explanatory returns is to analyse the extended meanings according to the means of extension that instantiate them, not through the semantic domains to which the new meanings belong. This means that the data can be accounted for with only a small number of principles, and allows us to recognize that even though the range of meanings which P/I verbs take on is vast and open-ended, the ways in which these meanings may be taken on are rather limited.

In (3) to (6), then, the use of P/I vocabulary to express motion is not explained by any inherent link between the domains of motion and of P/I; rather, motion is frequently expressed by P/I verbs because it can be connected to a basic P/I scenario, such as that expressed by the core meaning of *strike*, in three highly salient ways, each of which corresponds to one of the means of semantic extension identified in the typology. Specifically, motion is a subpart of the P/I event itself (example (6)), a common context within which P/I takes place (examples (4) and (5)), as well as being open to metaphorical conceptualization as P/I (example (3)). The justification of these explanations will be made clear presently.

2.2 The account of metaphor

The huge variety of metaphorical ‘meanings’ is one of the greatest obstacles to an economical model of meaning change. If metaphor is the linguistic reflection of a perceived ‘similarity’ or ‘resemblance’ between two concepts, and if a new meaning is created for every new metaphorical use of a word, then the possibilities of metaphor-based meaning change are as open-ended and unconstrained as the human capacity to perceive and create resemblance. As suggested, however, in Riemer (forthcoming), metaphors involving P/I vocabulary involve no change to
the meaning of the verb, and should therefore not be thought of as extensions of P/I vocabulary. In a metaphor, P/I is used as the conceptual model for the understanding of a non-P/I event, allowing a particular understanding of that event to be achieved (Lakoff 1993; Sweetser 1990; Barcelona 2000). It is consistent with this characterization of metaphor that there should be instances where it is hard to decide whether a P/I verb appears in its core sense or in a metaphorical one. (7), for example, can be interpreted either as involving real physical ‘beating’ resulting in pain, or as simply using beat as the verb to conceptualize the onset of pain, without any reference to physical P/I:

(7) 1450: Nowe mon neuere saule ne body dye, But with wikkid peynes euermore be betyne.

“Now must never soul nor body die, but with wicked pains evermore be beaten.”
(MED beaten 1a (b) vt punish)

This ambiguity between the metaphorical or real nature of the beating does not correspond to a choice between two different meanings of the verb, one metaphorical and one ‘literal’ or real. Instead, the ambiguity is located in the relationship between the (unchanging) P/I meaning of beat, and its referent, which is either a typical case of P/I, or is an event not normally understood as P/I but here metaphorically conceived of as such. The ambiguity is thus not a function of the meaning of the verb, but of an indeterminacy in its referent, which might be resolved with further information about the context.

This ambiguity reflects the categorizing role of language. The meaning of a verb (as of any lexical class) is a category which serves to group together a variety of disparate ideas as though they were equivalent (on the categorizing role of language, see Lakoff 1987; Taylor 1995; Ellis 1993:29–33). No two acts of beating are absolutely identical, so that the use of the same term for both immediately introduces to the meaning of the verb an element of ‘metaphoricity’ which differs only in degree, not in kind, from cases usually described as metaphorical: cases, that is, where the P/I verb is used as the name of a process which might not otherwise count as P/I. The onset of pain in (7) is a less typical referent of a P/I verb, whereas cases of P/I are typical ones. There is nothing, however, to prevent an atypical referent being assimilated to the category of P/I if there is good reason for this to occur. In the present instance, the virtue in treating the action of pain as P/I is that it allows an essentially obscure process that is not open to visible scrutiny to be described in the same terms as a more visible event.

Ambiguous cases like (7) would require more explanation in an analysis which posited a difference in meaning between core and metaphorical appearances of P/I vocabulary where metaphorical appearances of the verbs were treated as semantic
extensions and analysed as differing in meaning from the core ones. In the present framework, however, the treatment of these cases is entirely straightforward, because the fact that metaphorical occurrences of P/I verbs are not treated as differing in meaning allows the analysis to easily accommodate cases where both or either the non-metaphorical and the metaphorical readings apply.

2.3 Recursiveness of the means of extension

The third feature of the analysis contributing to the small number of processes posited to explain non-core P/I meanings is the fact that the means of extension can apply to each other. Each of the four processes of extension posited above is independently motivated by the data. Many less obvious extensions of P/I vocabulary can be explained as the result of two of these processes operating sequentially. Examples of this recursiveness will be given below and I will therefore not illustrate it here. Suffice it to say that the most frequent case is where one of the three metonymic means of extension is used in a metaphorical application. That coalitions between the processes should exist is not surprising. If they reflect independent cognitive operations, it might be expected that the output of one should form the input of another.

2.4 Postcategoriality

The final way in which the explanatory machinery of the analysis is constrained is through use of the categories ‘postmetonymy’ and ‘postmetaphor’, discussed in greater detail in Riemer (2002). These categories extend the explanatory reach of metaphor and metonymy by giving proper recognition to the role of conventionalization and generalization in semantic change. I will concentrate here on postmetonymy. Many clear cases of metonymy are subsequently extended to apply beyond the bounds of their original reference. For example, strike undergoes a very frequent metonymic extension of type two above whereby its denotation is no longer limited to the core P/I meaning of the verb, defined in the OED as “deal a blow, hit with some force” (strike 25a), but is extended to include the effect of the P/I. (8) and (9) are examples involving the P/I in hand-clapping (note that the interpretation of these cases rests on a metaphorical understanding of up to express activity or operation, typical of verbs denoting the starting of an activity, like start up, fire up, to be up and running, get (an idea, etc.) up). The paraphrase of the meaning reveals an extension from denotation of a P/I scenario pure and simple to that of the effect of the scenario: movement induced in the object that is struck:
3. Meaning change in strike

3.1 Metaphorical applications of the core verbal meaning

In metaphorical applications of P/I vocabulary, P/I is used as a model for the representation of other events. Because metaphors function by attributing the properties of a ‘vehicle’ scenario to a ‘target’, no difference exists between the semantic
contribution of the verb in core P/I uses and in metaphorical applications of the core meaning. (11) is an example of a common metaphor whereby consciousness is represented as the undergoer of a P/I event, and mental events (words, sights, sounds, ideas etc.) are treated as (what I will call the) ‘impactors’. (12) exemplifies the metaphor ‘detrimental interaction is P/I,’ according to which a variety of unspecified harmful events are treated linguistically as though they were P/I events.

Thus, strike in (11) and (12) (metaphorical appearances) has the same meaning as in (13) and (14) (non-metaphorical or core appearances):

(11) 1775: Hold… a thought has struck me!
    (OED strike 64 vt (of a thought, idea) come into the mind of)
(12) 1607: Now the Red Pestilence strike al Trades in Rome.
    (OED strike 45b. vt of a disease, attack or inflict suddenly, make infirm, lay low)
(13) A rock has struck me!
(14) The soldiers strike the prisoner.

Neither diachronic nor synchronic semantics, strictly understood, need posit any meaning difference. Two other metaphors using strike appear as (15) and (16); the first exemplifies the metaphor ‘Requests are acts of P/I,’ the second ‘Arrival at a location is P/I’:

(15) 1899: . . . let’s hurry by or he’ll strike us for the price of a drink.
    (OED strike 75d. vt make a sudden and pressing demand upon (a person for a loan, etc.))
(16) 1890: They struck the river within a day’s ride of Rainbar.
    (OED strike 68a. vt come upon, reach in travelling)

Note that while strike can be paraphrased as “come into the mind of” in (11), as “attack or inflict suddenly” in (12), as “make a sudden … demand upon” in (15) and as “come upon, reach in travelling” in (16), as is done in the OED’s definitions, these paraphrases do not have any status within the current analysis. According to the theory of metaphor adopted here, strike in the above examples has the same meaning or paraphrase as it does in core appearances, and the OED’s definitions represent alternative, non-metaphorical descriptions of the same state of affairs, not descriptions of the meaning of strike.

This identity of meaning between metaphorical and core application is what gives the P/I verbs efficacy as the metaphorical vehicles for their target concepts, since they allow the target to be represented in exactly the same way as ordinary P/I events. Metaphors involving P/I verbs are thus not extensions of verb meaning, but applications of it to different contexts.
3.2 Metonymic extension to the effect of the action of the verb

The metaphorical applications above were not semantic extensions of *strike* because there was no change to the meaning of the verb. By contrast, the rest of the examples to be discussed are cases in which a meaning has to be attributed to the P/I verb that differs from the core P/I sense. These meanings are the result of extensions from the core P/I event to three highly salient classes of event associated with it: the effect of the P/I, the wider context in which the P/I occurs, and various sub-parts of the P/I event itself. These will be dealt with in turn. One of the commonest types of extension is that in which the P/I verb denotes not only the act of P/I itself, but the effect of this act. These examples are classified as metonymic extensions to the effect of the P/I.

The largest category of metonymic extensions to the effect of the P/I is ‘Motion induced in object by P/I,’ as exemplified by (17) and (18):

(17) 1612: The Tennis-ball, when strucken to the ground, With Racket, .... doth back againe rebound.
(OED *strike* 27a. *vt* with complementary adverb or phrase: remove or drive (a thing) with a blow of an implement or hand.)

(18) 1831: The soldier .... struck the head from the body.
(OED *strike* 31c. *vt* with complementary adverb or phrase: remove or separate with a cut.)

The meaning of *strike* in these occurrences is analysed as "x make y move by striking," with the phrases *back againe* and *from the body* specifying the direction of the motion.

Metonymic extensions of P/I meanings may themselves be used in metaphorical applications for the conceptualization of other scenarios. Thus, (19) is a metaphor in which the metonymic extension of *strike* to denote motion caused in its object is used to conceptualize a change in colour:

(19) 1823: I shall love to see the sense of approaching death *strike* the colour from that ruddy cheek.
(OED *strike* 27b. *vt* remove suddenly as with a blow, dash)

*Strike* is analysed as meaning “x make y move by striking,” exactly the same meaning the extension has in non-metaphorical contexts.

Contexts like (20) refer to the object of *strike* being caused to move downwards as a result of the action of the verb:

(20) 1440: He .... *Strake* down a standerde.
(MED *striken* 2 (a) *vt* ~ *doun* knock (sb. or sth., an animal) down by smiting)
Examples like this are analysed as metonymic extensions to the effect of the P/I, in which motion is induced in the object surface. Some instances of *strike*, however, indicate that motion has been induced in the verb’s object, but not by an act of P/I. Examples of this are (21) and (22):

(21) 1745: *Both Ships struck their Yards and Top masts.*

(OED *strike* 17 *vt* lower, take down)

(22) 1829: *At the first dawn of day, all was in motion; . . . some striking the tent, yoking the oxen, and saddling the horses.*

(OED *strike* 22 *vt* let down (a tent) for removal; cf. 23 *vt* unfix, put out of use (sails, tents, etc.).)

Extensions like this are classed as ‘postmetonymic’ extensions to the effect of the P/I: striking something may often have the effect of making it move, and the verb may be metonymically extended to convey this effect, giving a paraphrase of its meaning “x make y move by P/I”; in the postmetonymic extension that depends on this initial metonymy, the P/I verb comes to be applied to cases where its object moves, but not as the result of P/I, giving the paraphrase “x make y move.” This represents a generalized reanalysis of the extended meaning of the verb in which “by P/I” is dropped.

*Strike* in the following two citations is analysed as meaning “x make y by striking,” exemplifying the category of extension “object brought into being by P/I,” another of the types of metonymic extension to the effect of P/I:

(23) 1755: *I must observe, that no man can strike fire with a feather.*

(OED *strike* 30a. *vt* produce (fire, a spark) by percussion)

(24) 1816: *No sooner had the horses struck a canter . . .*

(OED *strike* 49b. *vt* of a horse: alter his pace into (a faster movement))

This extension has various metaphorical applications like that in (25), in which a mental ‘impression’ is produced by an act of P/I:

(25) 1615: *I wish my Verse should such Impression strike, That what men Read off, they should thinke the like.*

(OED *strike* 28e. *vt* obs. imprint on the mind)

*Strike* is paraphrased as “x make y by P/I” in this metaphorical application.

Example (26) can be seen as exemplifying a metonymic extension of the verb meaning to convey a combination of two effects: *strike* in (26) conveys both the creation of heat where none existed before, and the movement of the heat up from its point of origin:
3.3 Metonymic extension to the context in which the action of the verb occurs

In metonymic extensions to the context in which the P/I occurs, the meaning of the verb is extended to denote certain features of the broader event frame in which the P/I takes place, and without reference to which the correct interpretation of the verb cannot be achieved. This will typically involve the specialization of the P/I to a particular situation. In (28) below, for example, P/I occurs in the context of a battle, and strike takes on the meaning “fight,” denoting not only the act of P/I, but all the associated activities:

(28) 1601: His present gift Shall furnish me to those Italian fields Where noble fellowes strike.
(OED strike 35a. v1 to use one’s weapons: to fight)

The meaning of the verb thus derives from the context of the P/I, in that strike stands metonymically not only for the P/I event itself but for all the actions in the event frame of ‘fighting,’ of which P/I is a central member.

Similarly, the context of the following example is the playing of musical instruments, with strike being open to interpretation not simply as a verb of P/I, but as meaning something like “strike so as to make a musical noise”:

(29) 1594: He that striketh an instrument with skill, may cause notwithstanding a verie vnpleasant sound . . .
(OED strike 29d. vt touch a string to make a note)

In order to interpret strike correctly the hearer has to understand that the instrument as a whole is not simply the undergoer of a generalized P/I event, but that a particular part of the instrument is being subjected to P/I in a particular way.
It is the placement of the verb within the context of the production of music that allows this interpretation to be achieved, with the information that enables the correct understanding of the verb being supplied from the context in which the verb occurs.

3.4 Metonymic extension by selection of a constituent of the verbal event

This means of extension can be seen as the converse of the previous one. Instead of the verb's meaning spreading outwards to include elements of the context, the verb's meaning shrinks so as to select only a subpart of the meaning denoted in the core sense. Strike exhibits this extension in a metaphorical application:

(30) 1639: Hee doubted no more of that truth which strooke into his eyes.
     (OED strike 51a. vi move quickly, dart, shoot)

The intransitive frame in which the verb appears removes the object surface from its former position of salience in the P/I scenario, necessitating a description of strike as a verb of motion meaning “move quickly,” with the motion arising as the constituent of the P/I scenario that remains when the object surface is lost. The contrast with the core P/I meaning can be seen by a comparison with (31):

(31) He doubted no more of the truth which struck his eyes.

Here eyes is coded as the direct object of the P/I verb. In (30), however, strooke is intransitive, which demotes the object surface from its position of prominence as a central part of the P/I scenario. The fact that contact did in fact take place between the metaphorical impactor, truth, and the eyes, is now conveyed by the preposition into, with the intransitive verb specifying the type of contact involved. Strooke in (30) thus differs from its core P/I sense in having lost the element of contact with the object surface: the verb's meaning has been changed by selecting the constituent of motion inherent to the P/I event and factoring out the contact in which the motion usually results, leaving this to be specified by the prepositional phrase with into.

4. Conclusion

The study of diachronic semantics can be most explanatory when it concentrates on the linguistic mechanisms (like polysemy) that underpin semantic change. If we are to understand the historical behaviour of an area of the lexicon with the great denotational heterogeneity that is the hallmark of a domain like P/I, it may be a fruitful approach to move away from denotation as the heuristic guiding research.
and to look for regularity instead in metaphor, metonymy and the other semantic mechanisms that lead from one meaning to another.

Notes

1. Note that this paraphrase is not, pace an anonymous reviewer of this article, circular. The fact that the paraphrase of the extended sense of strike in (17) and (18) contains the verb strike itself directly reflects the relationship between core and extended meaning: the extended meaning of strike includes the core meaning of the verb, to which it adds the information that motion results from the act of striking.

References


Dictionaries:

Borrowing as a tool for grammatical optimization in the history of German brand names

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1. Introduction: External vs. internal conditioning of borrowing

The impact of English as a global language provides linguists with an excellent opportunity for studying different kinds and constellations of borrowing. In the constellation treated in this paper, a large, essentially monolingual (though multi-dialectal) speech community, namely the German one, voluntarily borrows certain features from another language, namely English, mainly because of the prestige of the latter, but not because it is forced to do so by any institutional or even military pressure, or because language users could not make themselves understood among each other in principle without the loans. These are, so to speak, ‘luxury loans’.

In such a constellation, it is plausible to assume that the process of borrowing is influenced both by external factors (which could be labelled ‘social’ in the widest sense) and internal factors of the target language. Linguists working on language contact strongly differ according to the relative importance attributed to these two types of factors. Whereas some consider the social ones as almost exclusively relevant (most categorically Thomason & Kaufman 1988:35), others assume that borrowing is normally externally induced, but internally controlled by the target system. There is, however, a wide range of assumptions regarding the nature and degree of this control reaching from the requirement of more or less close compatibility with the target system (already, for example, in Meillet 1921:87, currently maintained in an attenuated manner, for example by Muysken 1995 and Myers-Scotton 1993 in different theoretical frameworks) over compatibility with its typological ‘drift’ (for example, Sapir 1921:200; Jakobson 1938) to some kind of optimization of this system. (Compare, for example, Vachek 1962; Clyne 1987; Werner 1991.) Of course, several or even all of these types of control may work together.
The present paper is an attempt to show that all these kinds of control apply even in a domain only loosely integrated into the linguistic system and extremely prone to external influences, namely brand names. In the formation of syntactically complex German brand names, borrowing of English lexemes has increasingly been used over the past century in a pinpointed manner to circumvent a specific problem of German grammar, particularly awkward in brand names, thereby respecting the ‘typological drift’ of German and certain universal constraints on the violability of the grammar of the target language by borrowing. In Section 2, the grammatical problem will be summarized. Section 3 presents different strategies of circumvention in the history of German brand names. Section 4 contains some tentative reflections about the status of the problematic construction in present day colloquial German and its possible further development, and Section 5 evaluates our results with respect to the different claims about linguistic control of borrowing discussed above.

2. The 'strong adjective inflection' in the immanent typology of German

Compared to other Germanic languages, German has retained the systematic distinction of Germanic between the so-called ‘strong’ or ‘pronominal’ and the so-called ‘weak’ inflection of adjectives remarkably well. Leaving details aside, the two are distributed as follows: The strong inflection, which has retained far more morphological distinctions, marks the leftmost inflectable word of a complex noun phrase, which, in most cases, is a determiner or an adjective, whereas the weak inflection is reserved for adjectives or participles following a strongly inflected determiner. Both inflections mark an adjective as an attribute, as opposed to the uninflected form, which is restricted to predicative and adverbial use.

This distinction has been brought about by a long-term morphosyntactic evolution beginning in Old High German at the latest. Its objective was the construction of a frame established by the agreement in gender, number, and case between a strongly inflected element at the beginning of a complex noun phrase, and the head noun at its end. All inflectable attributes with their complements have to be included in this frame. As the marking for these categories is deficient both in the inflection of the determiner and of the noun, for the listener, agreement actually works as a kind of ‘guessing strategy’ rather than as the matching of identical elements. This strategy relies heavily on gender as an inherent and, therefore, very reliable feature of the head noun. The framing principle can yield rather long and complex constructions, such as in (1):

(1)
In spite of its internal complexity, this noun phrase is relatively easy to handle within a sentence, because its borders are so clearly marked. This technique of marking the borders of constituents by frames applies in other fields of German grammar as well, especially in the syntax of the verb. In Ronneberger-Sibold (1993), I take it as a typological characteristic of great importance in the evolution of the German language, in the sense that, over a long period, grammatical features serving the framing principle were retained or created, even if they appear quite odd, compared, for example, to English, the grammar of which is governed by principles other than framing. (Compare, for example, Hawkins 1986.) During this development, the framing principle, as a grammatical feature of typological relevance, even controlled the oft-cited typological shift from syntheticity to analyticity in German. Constructions leading to a more analytic character were tolerated and even favoured as long as they did not come into conflict with framing. If they did so (for example, in the inflection of the definite article), new synthetic forms arose (cf. Dal 1942), or the old forms (if still available) were retained or even restored.

Obviously, the strong inflection of determiners is such a conservative feature. But what about the same inflection when used for attributive adjectives? If we leave out the determiner in (1), the strong inflection switches to the adjectives *vermittelbar* “explicable”, and *grammatisch* “grammatical” because they are no longer preceded by a strongly inflected determiner. This yields the noun phrase in (2):

(1)

\[
\text{this to.foreigners only hard.ADV explicable grammatical knowledge}
\]

\[
\text{det adverb attributive adjectives head noun}
\]

\[
\text{strong infl.(nom.sg.neut.) uninflected weak infl. (nom.sg.neut.)}
\]

Agreement

“this grammatical knowledge, which is hard to explain to foreigners”
Elke Ronneberger-Sibold

“Grammatical knowledge, which is difficult to explain to foreigners”

Here, the strong inflection is not entirely redundant – it still contributes to the identification of gender, number, and case (although far less with respect to case than is often assumed), and it marks the attributive function of the adjectives – but it does not serve for framing, because, in accordance with the overall predetermining structure of German, the complements of the adjective have to precede it.

Thus, if German were to develop further towards analyticity without violating the framing principle, a possible next step would be to abandon strong inflection of attributive adjectives. This could be done either in favour of the weak inflection (which would then exclusively signal attributive function of an adjective as opposed to the strong inflection, which would be reserved for determiners), or in favour of the uninflected form. The latter solution would cause more ambiguity, for attributive and adverbial function of an adjective would no longer be distinguished within a noun phrase, for example, in unheimliche, alte Ruinen “awful old ruins vs. unheimlich alte Ruinen “awfully old ruins” (Werner 1979:975). Circumventive strategies leading in both directions will be discussed in Section 3.1 for brand names and in Section 4 for normal speech.

3. The strong adjective inflection in brand names

While in normal speech, the problem can be tolerated or circumvented by different strategies, which will be presented below, it takes on serious dimensions in the formation of syntactically complex brand names. On the one hand, the producer of such a name wants to qualify his or her product or firm by outstanding, distinctive, and, of course, positive traits – the most natural task for an attributive adjective. On the other hand, the choice of such an adjective entails strong inflection, which makes its form little suited for the purpose due to phonological and morphological reasons.
Regarding phonology, the inflection makes the adjective not only longer, but also phonetically unattractive, because all the endings contain the vowel schwa, whereas in brand names, the peripheral ’full’ vowels are preferred even in unstressed positions. In a universal perspective, this can be explained by the ’weak’ character of schwa attested in studies of sound symbolism such as Fónagy (1963:50) and Ertel (1969:101). In the synchronic phonology of German, this universal sound-symbolic value is strengthened by the function of schwa in the vowel system, for it is interpreted as a reduced or ’weak’ allophone in unstressed position of stressed /e/ or /e/ in a large dialect area in northern and central Germany, as shown by pronunciations such as [’kafɛ] instead of [’kafe] for Kaffee “coffee”. Of course, such a ’weak’ allophone is not felt to be euphonic in a brand name. Moreover, a word form consisting of a stressed syllable containing a ’full’ vowel plus one or two syllables containing schwa is extremely typical of German (cf. Eisenberg 1991), which is precisely not what a brand name should be (cf. Ronneberger-Sibold 1997).

With respect to morphology, the strong endings, combining three categories in one exponent, which is itself ambiguous (for example, -er can express ”nom.sg.masc”, ”gen.sg.fem”, ”dat.sg.fem”, or ”gen.pl.”) are, of course, a burden for the speaker, the listener, and the learner. Expressed in the framework of Natural Morphology, they are heavily marked for the semiotically-based naturalness parameter of biuniqueness. (Compare, for example, Dressler 2000). In normal speech, the low degree of universal morphological naturalness is counterbalanced by their system-dependent naturalness (this type of ending is normal in German), and by their usefulness for syntax: The attributive function of an adjective is not only expressed by word order (which is not always reliable, compare the example with unheimlich given above), but by a morphological exponent of its own. In brand names, however, these are no advantages: Normalcy is precisely not what is favoured, and a name is normally not syntactically expanded in a way which might lead to functional ambiguity of its parts.

3.1 Circumventive strategies

There are several possibilities to circumvent the problem, none of which is, however, entirely satisfying in brand names.

Firstly, you can hedge into one of the few instances where an attributive adjective is regularly uninflected. Apart from some petrified syntagms retaining an older usage, such as ein gut Teil “a good deal”; römisch Eins, Zwei... “Roman one, two...”; these are a few adjectives of foreign origin, such as lila ”purple”, rosa ”pink”, extra, prima, ”splendid, first rate” (colloquial) (for example, in the name of 1894 Prima 4 Adler-Raffinade “first-rate four eagles refined sugar”), which cannot be inflected
because they end in an unstressed full vowel, and some former nouns, such as *orange* "orange" and *klasse* "splendid" (colloquial). And there is one productive type, namely place adjectives in -er, such as *Hamburger* "coming from or belonging to Hamburg". Diachronically, these latter are nouns in the genitive plural; therefore, they are not inflected as adjectives to this day. Semantically, these adjectives are very distinctive, which makes them a relatively good tool for brand names, but unless the place name they are derived from has a specific flair, they are not particularly evocative. A *Hamburger Börsenfeder* (1894), literally "pen from the stock exchange of Hamburg", certainly is very elegant and solid, but what are the sugar beets called *Kleinwanzlebener Original* (1894) like? Perhaps, Kleinwanzleben is famous for its sugar beets, but in any case, the name is not felt to be euphonic – like all the others in -er – because of the schwa-problem mentioned above.

A second possibility of circumventing strong inflection is incorporation of the adjective into its head noun as the first member of a determinative compound. Thus, instead of *Normale Papiere* "normal papers" (meaning "papers corresponding to the size norms", not "ordinary papers") you get *Normal-Papier* (1894). This, however, raises all the well-known problems related to German compounding, as are length and intricacy of the resulting word, especially in the written code, since German orthography demands writing compounds together. (This is, by the way, circumvented by a hyphen in the name *Normal-Papiere.*) Moreover, there can be problems of phonetic realization, such as accent clash or difficult consonant clusters, etc.

The third possibility is to add a determiner, preferably the definite article, which triggers weak inflection of the adjective. Thus, instead of *Naturbequeme Solidus* "Naturally comfortable Solidus" (*Solidus* is a brand of shoes), you get *Die Naturbequemen Solidus* (1994) "the naturally comfortable Solidus". Semantically, this solution is not bad, because the definite article suggests that the product is universally known (like, for example, *The Great Wall*), but phonetically, the result is simply clumsy, for it consists of at least three words, one of which contains at least one schwa-syllable for the weak inflection. Rhythmically, *Die Naturbequemen Solidus* could at most serve as a slogan, but as a name it is a very unfortunate invention. With respect to universal morphological naturalness, the extremely ambiguous weak endings are even worse than the strong ones. Moreover, the construction corresponds to the most common type of German noun phrases. It is thus simply too ordinary to be a good brand name.

Finally, the adjective can be postposed, as, for example, in *Küche aktiv* (1994), literally "kitchen active", instead of *aktive Küche* "active kitchen" for kitchen equipment. This is a very elegant solution for a brand name, because it confers special weight to the adjective, which structurally comes close to an apposition, and because it evokes the structural pattern of Romance languages. It must, however, be ensured that the construction is in fact interpreted in this way and not as
in some way reminiscent of Middle High German, where phrases like der ritter balt “the bold knight” were quite common. This constructional type has survived or even been revived in traditional songs and poems, for example, by Goethe in his famous Röslein rot “little red rose”. Nice though this may be, it is, of course, an association to be avoided if one wants to sell modern products.

In sum, all circumventions of the problem of strong inflection in adjectives are make-shift. For sure, the best solution in brand names would be uninflected attributive adjectives, since in such names, an erroneous interpretation of the adjective as an adverb or a predicate is excluded anyway.

3.2 Circumventive strategies in 1894

1894 was the first year in which German brand names were registered according to an international convention and thereafter published periodically. The following statistical data are based on a systematic diachronic investigation of the registration lists.

In 1894, English was not yet a global language; it did not even have a particular prestige in Germany, the main prestige languages still being Latin and Greek (and, to a lesser degree, French, the influence of which had considerably diminished compared to the 17th and 18th centuries). As Latin and Greek were, however, not helpful for the problem at hand, the creators of German brand names solved the problem mainly by stretching to the extreme the regular possibilities of using uninflected attributive adjectives in German. With 41%, these even exceeded the regularly inflected ones (32.1%). The majority of regularly uninflected attributive adjectives were place adjectives in -er, but there were also a few others such as extra and prima (cf. Prima 4 Adler-Raffinade cited above).

But, in addition, the creators of brand names of 1894 did something else, virtually unheard of: in a kind of bold experiment, they simply used the uninflected form instead of the strongly inflected one, producing completely ungrammatical constructions such as Extra Qualität Grün Lack “extra quality green lacquer” for a wine sold in bottles sealed with green lacquer, or Blau Schlüssel “blue key” for a tobacco. (The motivation of this name is no longer clear). As indicated by the spelling with a blank and capital initial letter of the last word, these constructions were not intended to be interpreted as compounds. In one case, Spanish.Reuter “Spanish Reuter” (Reuter is a proper name) for a kind of brush, this was even indicated by a full stop.

Finally, there was one anglicism in the entire corpus of adjectives of 1894, namely Feine Elliptic Nadeln “fine elliptic needles”. (This was the time, when needles from Sheffield were famous all over the world). In German, the name would have been *Feine elliptische Nadeln with strong inflection of elliptisch.
3.3 Circumventive strategies in 1994

Apparently, the ‘experiment’ of 1894 with irregularly uninfluenced German preposed attributive adjectives was not very successful, for, in 1994, i.e., exactly one century later, no irregularly uninfluenced German adjectives are left. This, however, does not mean that the creators of brand names have returned to regular strong inflection, for, compared to 1894, this inflection has decreased by 50%. The explanation is that irregularly uninfluenced German adjectives have been rendered superfluous in 1994 by simply borrowing uninfluenced adjectives from English. Three quarters of all uninfluenced adjectives occur in names such as Big Limit (clothing), Black Dog and the Pocket-Pool-Boys (a music band), Blue Note (clothing), Burning Snow (snowboard clothing), Clean Plan (software), etc. The uninfluenced English adjectives of this type have to a large extent replaced the old place adjectives in -er, which only attain 20.5% in 1994, as opposed to 87.5% in 1894.

At first sight, this looks like a dramatic growth of the type represented by the single name Feine Elliptic Nadeln in 1894. However, closer inspection reveals an important difference: In Feine Elliptic Nadeln, only one of the preposed adjectives is English, the head noun (and the other adjective) are German, i.e., Feine Elliptic Nadeln is a hybrid name. Hybrid names with English adjectives are still possible in those constructions where even a German adjective would be uninfluenced, i.e., in compounds (for example, Baltic-Bau “Baltic building (company)” for prefabricated houses) and when the adjective is postposed, for example, Rausch Cool “Cool intoxication” for chocolate. (Rausch is also a proper name.)

This, however, is no longer possible with preposed uninfluenced English attributive adjectives – if such an adjective is chosen, the head-noun has to be English as well. For example, Black Dog is a good brand name, and even as a non-onymic noun phrase in a German context it would not be considered as ungrammatical (though not as German), whereas *Black Hund would be of very low acceptability as a brand name, and totally ungrammatical as a non-onymic noun phrase.

Note that this ungrammatical character is not due to the hybridity of the noun phrase as such, but to the fact that the attributive adjective is uninfluenced, contrary to German grammar. This will become clear from the following systematic specification of all theoretically possible combinations of English and German adjectives with English and German head-nouns. As adjectives, I choose English cool in the sense of ‘attractive’ and its (slightly outdated) German equivalent toll, as nouns English shirt and German Hemd. Both English words are perceived as common anglicisms by their (preponderantly young) users. To the right of each type, there are a few examples randomly chosen from a German public relations magazine for cosmetics (Beauty talk April/May 2002):
Borrowing as a tool for grammatical optimization

(3) Theoretically possible combinations of a German or English attributive adjective with a German or English head-noun:

A. Töll-es Hemd bliss-e Haut “pale skin, nom./acc.sg.fem”; neu-en Schwung “new vigour, acc.sg.masc”; bei gereizt-er Haut “for irritated skin, dat.sg.fem”


C. Cool-es Hemd leger-e Hose “casual trousers, nom./acc.sg.fem” (leger [lê’ʒeR] is a gallicism); spektakulär-e Ergebnisse “spectacular results, nom./acc.pl”; in trend-ig-em Schwarz-Weiβ “in trendy black-and-white, dat.sg.neut”. (The English suffix -y in trendy has been replaced by German -ig to allow for inflection, for according to its sound shape, trendy would belong to the regularly uninflected type of lila etc.)

D. Cool-es Shirt mit marin-en Extrakten “with marine extracts, dat.pl”; aktuell-e Sounds “trendy sounds, nom./acc.pl”; zu einem glamourösen Look “to a glamourous look, dat.sg.masc (weak infl.)”

E. *Toll Hemd
F. *Toll Shirt
G. *Cool Hemd
H. Cool Shirt Hot Socks (explained as Thermo-Socken later on in the text); many lexicalised noun phrases such as Hot Pants, Blue Jeans; many brand names integrated in the running text, for example, das Softening Milk Body Spray verleiht Frische und Feuchtigkeit “the Softening Milk Body Spray provides freshness and moisture”

Types A–D clearly show that German and English adjectives and nouns can be freely combined, as long as the adjective is inflected according to German grammar. The only way of using an uninflected attributive adjective is choosing it in English and combining it with an English head-noun yielding type H, i.e., in order to leave German grammar, you have to leave the German lexicon as well.

This state of affairs strikingly matches certain findings from the study of intrasentential code switching, i.e., “the alternative use by bilinguals of two or more languages in the same [sentence]” (Milroy & Muysken 1995:7), although the German examples are clear cases of borrowing, not of code switching, because speakers and listeners using them are not bilingual. However, there are many points of
contact between the two operations, and, especially for brand names, there are
good pragmatic reasons for creating them in such a way that they could be used as
instances of code switching. This will become clear in the following.

A model of code switching explicitly including borrowing and particularly
well-suited to our examples is the one by Myers-Scotton (1993, 1995). Leaving
aside certain details and refinements negligible for the case at hand, one of her ba-
sic assumptions is the following: Among the different languages combined in the
same sentence, one, named the matrix language, dominates the other(s), labelled
embedded language(s). The matrix language sets the grammatical frame in which
lexical material from the embedded language(s) can be inserted. This exactly de-
scribes types A–D in (3). The only way to escape from the grammatical constraint
imposed by the matrix language is to construct an “embedded language island”, i.e.
a constituent in which both the grammar and the lexicon are taken entirely from
the embedded language. This obviously applies to type H in (3). The claim that
this is the only possibility rightly rules out types E–G.

Myers-Scotton claims that her model is valid for all kinds of borrowing and
intrasentential code switching, not only for those called insertional, for example,
in Muysken (1995:180). We cannot judge whether this is true, but the case treated
here, where a strong asymmetry between the languages involved does in fact ex-
ist, is extremely well described by her model. Especially the metaphor of an is-
land for a constituent in a foreign language surrounded by German text exactly
renders the impression made by the examples cited under type H in (3) in their
German context.

As far as brand names are concerned, this inherent salience of an “island” is,
of course, an extremely favourable feature. It is even preferred to achieving salience
by ungrammaticality, which, in principle, is allowed and even increasingly used in
brand names and in the language of advertisements in general. It is true that names
such as Blau Schlüssel or, to a lesser degree, Feine Elliptic Nadeln are conspicuous as
well, but their conspicuousness is, so to speak, negative. They are shocking, because
they are against the grammar of German, whereas, for example, Blue Note is not
shocking, but exotic, because it is simply outside of German grammar. Therefore, it
is no wonder that this way of circumventing strongly inflected attributive adjectives
won out over all others as soon as the prestige of English and basic acquaintance
with it among German language users made this possible. (Note that for the adver-
tising effect of these names it is not necessary that everybody can translate them.
It is sufficient that everybody recognizes them as English.) Furthermore, an entire
noun phrase presents an occasion to use more of the prestigious English lexemes
than a single one in names such as Feine Elliptic Nadeln.

For these lexemes, this means that adjectives such as Big, Black, Blue, Burning,
Clean on the one hand, and nouns such as Limit, Dog, Note, Snow, Plan on the
other are used in these names not only because they are English and thus confer the
social prestige associated with this language to the products, but also because they are needed for the construction of “islands” consisting of an attributive adjective plus head-noun.

4. First signs of a ‘decay’ of strongly inflected adjectives in present-day German?

In normal speech, the solution found for the brand names is not applicable, for this would indeed necessitate an enforced code switching between German and English each time a strongly inflected adjective is required in German. Therefore, the language-internal circumventions explained above are preferred. These are in particular the addition of a determiner, most often the definite article, in all domains of the German language, and postposition of attributive adjectives in certain professional jargons, a usage which is being imitated more and more in the language of the press. This is illustrated by the following examples taken from Eisenberg et al. (1998:259), a rather normative grammar of Standard German: 200 Schriftzeichen russisch “200 characters Russian”, Whisky pur “Whisky pure”, imitated in the language of the press, for example, Leben pur “life pure”, Abfallbörse international “waste stock exchange international”, Sport total “sports total”, Fußball brutal “football brutal”.

Consequently, the construction with the preposed adjective marked by strong inflection is becoming rarer and rarer, so that language users are gradually losing their unwavering control of it. The best symptom of such a development is hyper-correction, and indeed I increasingly observe highly educated speakers using the strong inflection instead of the weak one, if they wish to make a particularly erudite impression, for example, in the following elaborate sentence taken from a tea advertisement of a delicatessen proud of its long tradition.

(4) Auf der Zunge zeigt der Tee seine absolute Spitzenqualität in
   On the tongue shows the tea its absolute top quality in
   einem nicht enden wollenden lieblich spritzigem Flavour.
   a not to.end willing delicately sparkling flavour
   det.(str.infl.) pres.part.(weak infl.) adj.(irregul.str.infl.)

   “On the palate, this tea exhibits its absolute top quality in a seemingly never-ending pleasantly sparkling flavour.”

On the other hand, in a very colloquial Northern German style, one can increasingly encounter expressions such as gut Wetter heute or schön Wetter heute “nice weather today” and schlecht Wetter heute “bad weather today” with unin-
lected preposed attributive adjectives. These are probably synchronic extensions of relic forms such as bei jemandem gut Wetter machen, literally “to make good weather with someone”, “to try to make it up with someone” or interferences from Low German, where uninflected attributive adjectives are possible (cf. Stellschneider 1990:163.) This could become the germ of a revival of uninflected preposed attributive adjectives. Whether this, however, ever turns out to be so remains to be seen.

5. Conclusions for a theory of borrowing

The evolution of ‘luxury borrowings’ from English in German brand names clearly supports the view that grammatical borrowing is controlled by the target system in several respects, although absence of such control should be expected, if at all, in a type of words as loosely integrated in a system and as prone to extralinguistic pressure as brand names. This control obtains in all the respects discussed in the introduction:

The grammar of German is closely respected insofar as a tentative omission of the strong inflection of an attributive adjective before a German head noun not preceded by a determiner has been given up not only for German, but also for English adjectives. The adopted solution of constructing English ‘island’-NPs, where both the adjective and the head noun are English, is less of a violation of German grammar.

This solution is perfectly in line with the typological ‘drift’ of German as explained in Section 2: It leads to more analyticity without counteracting the framing principle.

The optimizing effect of the borrowed construction in the specific case of German brand names has been explained in detail in Section 3.3: The endings of the strong adjective inflection, which cause different phonological and morphological problems without any functional necessity, are circumvented. English ‘islands’ are salient within a German text without shocking the reader or listener by being ungrammatical, as was the case with earlier attempts at solving the same problem. Moreover, they present an occasion for using numerous words from English as a prestige language and facilitate international trade.

The grammatical control of borrowing by the target system discussed in this article is not evident at first sight, but was only revealed by close inspection both of the borrowed material and of the grammatical structure of German. This supports the general methodological principle of assuming uncontrolled borrowing only after a thorough examination of each case.
Notes

1. The diachronic investigation of German brand names underlying this article is a project supported by the Deutsche Forschungsgemeinschaft and undertaken at the Katholische Universität Eichstätt. My thanks are due to both these institutions and to my collaborators Kerstin Kazzazi, Victoria Schnitzlein, and Matthias Ruda. I am also grateful to all those who, at ICHL XV, helped me to develop my ideas by their discussion and comments, especially to Dieter Kastovsky, Donka Minkova and Susan Herring. The responsibility for all possible errors is of course mine.

2. Even in artificially created words not used in brand names, for example, in normal shortenings, schwa is systematically avoided in German (and, incidentally, French), probably due to its low functional load, being nearly the only possible vowel in completely unstressed position in the inherited lexicon. (Compare Ronneberger–Sibold 1995.)

3. The uninflected English form *trendy* is used as well, but only with English head-nouns, yielding type H, for example in the sentence *Ob Sie sich dabei für den avantgardistischen, den klassischen oder den trendy Look entscheiden, ist eine Frage des persönlichen Typs* “whether you decide in favour of the avantgarde, the classic, or the trendy look, is a question of your personal type”. It would be interesting to find the form combined with a German head-noun, for example in *trendy Farben* “trendy colours” corresponding to type G at least on the surface. I suspect that this will only be possible when *trendy* comes to be regarded as a German adjective of the *lila*-type.

4. The examples in (3) also show that it is the uninflected, attributive English adjective, which triggers an English head-noun and not vice versa, as the grammatical hierarchy might suggest: For an English head-noun, there are three possible types of attributes (B, D, and H), whereas for an uninflected English attributive adjective, there is only one type of head-noun, namely H.

5. Note that in truly bilingual speech communities, such strategies of circumvention by code switching are in fact used, as demonstrated by Clyne (1987).

References


Pragmatic relevance as cause for syntactic change
The emergence of prepositional complementizers in Romance

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1. Introduction

In this paper, it is argued that the emergence of prepositional complementizers in Romance has its origin in the fact that certain matrix verbs are, from a pragmatic point of view, likely to co-occur with particular adjunct types. Speakers will use these pragmatically likely combinations more frequently than others, which leads to their gradual grammaticalization along a continuum, from typical adjunct to complement. In the process, prepositions originally specifying thematic relations between matrix clause and adjunct turn into semantically bleached complementizers.

In Sections 2 and 3, it is shown how the demise of Latin inflectional morphology, and the special pragmatic status of participial constructions, contributes to the emergence of the Romance ‘prepositional infinitive’.

In Section 4, the pragmatic mechanisms triggering the shift from adjunct to complement are explained, while Section 5 examines two different subsequently emerging distribution patterns of the new ‘prepositional complementizer’, contrasting the spreading of a single preposition across the board in Romanian on the one hand, and a situation in which a balance between several different complementizers is maintained, as found in the majority of Romance languages, on the other.

In Section 6, finally, a currently ongoing process similar to the one hypothesized for de and a in Section 4, the emergence of pra as complementizer with causative verbs in Portuguese, is illustrated and analysed.
2. Non-finite clausal subordination in Classical Latin

In Classical Latin, infinitival clauses (with or without overt subject) can function only as a subject (1) or direct object (2) complement:

(1) Infinitival subject complement:

\[
\begin{align*}
TACUISSE & \quad NUMQUAM & MÊ \\
\text{remain.silent-INF.PAST} & \quad \text{never} & \quad \text{pers.pron.1ST.SG.ACC} \\
PAENITUIT & \quad \text{cause.regret-3RD.SG.PAST} \text{.}
\end{align*}
\]

“To have remained silent has never caused me regret.”

(2) Infinitival direct object complement:

\[
\begin{align*}
OMNÊS & \quad BEÁTI & \quad ESSE & \quad VOLUMUS \\
\text{all-nom} & \quad \text{happy-nom.pl} & \quad \text{be-inf} & \quad \text{want-1ST.PL.PRES} \text{.}
\end{align*}
\]

“We all want to be happy.”

Although Latin has a number of different types of infinitival complementation, such as the ‘Accusative and Infinitive’ with an overt non-coreferential complement subject, infinitives cannot be used with a preposition. Instead, a wide range of alternative non-finite verb forms, such as the supine, the gerund, the gerundive, and (absolute) participial constructions, give a more or less precise indication of the complement’s thematic or logical relation to its matrix clause.

3. The rise of the prepositional infinitive

Latin uses case and other inflectional morphology to express the logical and thematic relations between the constituents of a sentence. The large-scale reduction or loss of this morphology during the transition from Latin to Romance would unavoidably have rendered this system non-functional, leading to the need for alternative strategies to clarify sentence-internal constituent relations.

Where Latin uses a range of embedded ‘nominal’ verb forms whose morphology indicates their thematic relation to the matrix verb, Romance exploits the availability of prepositions to express abstract notions that are perceptually linked to the prepositions’ original physical meaning.

Such figurative extension of prepositional meaning is not entirely new, as it already occurs in Latin with the gerund and the gerundive. For instance, originally directional AD is found with both these forms to express finality, as in (3):
Thus it appears (that) we are born to act.” (Cicero, De Finibus, 5.58)

However, this type of construction is only marginal in modern Romance. The resistance to its spreading appears to be linked to the tendency of the gerund(ive) to merge with the present participle, and to the fact that participial clauses tend to be used for pragmatically backgrounded information: Nutting (1930) demonstrates that the ‘absolute’ use of participles is, essentially, a strategy to avoid explicit specification of the logical relation between matrix and subordinate clause. This underspecification leads to a pragmatic backgrounding effect, with the participial clause providing information about the general setting of the events described in the main clause.

It is in this role that gerundial and participial clauses survive into modern Romance, contrasting with finite as well as infinitival subordinate clauses in terms of their degree of overt specification. The background information they add may be temporal, causal, conditional, concessive, instrumental, or even final, but their central function is to set the stage for the events of the main clause. Indeed, the preposition regularly found in gerundial clauses in certain Romance varieties today, *en* “in” (French *en faisant*, *haciendo*), does not give any relational information beyond a general (temporal) association of events, thus reflecting and even reinforcing the underspecified nature of the construction.

In finite as well as infinitival embedded clauses, on the other hand, the Romance languages develop a system based largely on the use of prepositions to specify sentence-internal logical relations. In keeping with the overall trend towards a more analytic structure, most Latin subordinating conjunctions are replaced by a more transparent modular combination of an unspecific hypotactic conjunction (*que*, *che*, etc.) plus a specific preposition. The corresponding logical relations of embedded infinitives to their matrix clauses are clarified by means of the respective preposition alone, further enhancing the structural transparency and symmetry of the system.

A necessary precondition for the emergence of these prepositional infinitives is, once again, the demise of Latin case morphology, as Latin prepositions obligatorily assign case to the noun they function as head of. Since Latin infinitives cannot be inflected for, or assigned, case, it would have caused severe structural problems to have infinitives headed by prepositions.

By the Middle Ages, however, prepositional infinitives are already well established, as shown in the following Spanish examples from the Primera Crónica General (1289):
4. How the adjunct becomes a complement

So far, we have looked at prepositional infinitives that function as typical adjuncts, adding information to the sentence that may be required pragmatically in the context of the utterance, but not syntactically by the argument structure of the matrix verb. It is precisely these pragmatic (contextual) requirements that eventually lead to the gradual change in syntactic status of the prepositional infinitive, and thereby implicitly to a change of the preposition’s syntactic function.

The semantic content of certain verbs makes it likely that the average language user will be interested in a certain type of additional, ‘circumstantial’ information particularly frequently. Use of the Spanish verb aprender, “to learn”, will often not just raise the question what is being learnt, but also what the purpose of this learning is – learning something does, after all, require an effort, and is thus unlikely to be done without a good reason or purpose; such a good reason is usually worth mentioning.

In other words, in connection with the verb aprender, purpose very frequently has a high degree of ‘pragmatic relevance’. This frequent relevance leads language users to expect a final adjunct (or complement) in connection with this verb; at this...
point, [purpose] has started to impinge upon the argument structure of *aprender* as a \(\theta\)-role.

At the same time, a great deal of semantic overlap between syntactic direct object (i.e. the material being learnt) and final adjunct (i.e. the purpose of learning it) can be expected: someone who acquires the skill of reading will do this for the primary purpose of being able to read. So in example (7), *a leer* represents both the direct object and the purpose of *aprender*:

(7) \(\text{Mi hermanito está aprendiendo a leer.} \)  
My brother-DIM learn-3RD.SG.PRES.CONT to read  
“My little brother is learning to read.”

The status of *a* in example (7) is thus not unambiguously determinable. We might be dealing with a genuinely ambiguous construction in which *a leer* can be interpreted as either a purpose clause or an object clause. However, the close pragmatic link between the two interpretations, combined with the absence of any formal distinction, gives the speaker the opportunity not to make a choice at all, instead expressing something that lies between the two.\(^6\) Such ambiguous structures do, in any case, pave the way for reanalysis of *a* as a purely functional complementizer.

Semantic bleaching of *a* in this position is further facilitated by the availability of an alternative, phonetically stronger final preposition *para*, which can be used to unambiguously and explicitly convey the notion of purpose, as in (8):

(8) \(\text{Mi hermanito está aprendiendo a leer para entender la Biblia.} \)  
My brother-DIM learn-3RD.SG.PRES.CONT to read in.order.to understand-INF. the Bible  
“My little brother is learning to read in order to understand the Bible.”

Other verbs stand in a different logical relationship to the information that is most commonly pragmatically relevant and that frequently overlaps semantically with the direct object. In combination with these verbs, prepositions other than *a* are used to convey this relation, and the respective prepositions take on the role of complementizer:

- *apostar por alcanzar algo* “to bet on achieving something”
- *empeñarse en hacer* “to insist on doing”
- *soñar con hacer* “to dream of doing”
5. Subsequent development of prepositional complementizers

In this section, I will discuss two different evolutionary patterns of these – initially pragmatically motivated – prepositional complementizers in different Romance varieties.

5.1 Romanian: Analogical levelling

Scholars such as Haspelmath (1989) claim that the Indo-European infinitive is not semantically neutral, but intrinsically linked to the notion of purpose. In the Germanic languages, for instance, there is a clear tendency for the directional or final preposition (Engl. to, Dutch te, German zu) to become a grammaticalized marker of the infinitive.7

In Romanian, the function of a evolves along similar lines, but its grammaticalization has progressed even further, as it has all but lost its prepositional value in the modern language, except in a few lexically fossilized expressions such as a mirosi a “to smell of”.

According to the mechanism described in Section 4 above, it can be assumed that in the evolution of Romanian the most frequently relevant type of information conveyed by means of infinitival adjuncts was [purpose], leading to the predominant use of a with the infinitive. Due to its high frequency, this pattern was then analogically extended to other structurally equivalent contexts.8 Once this has taken place and a is no longer uniquely associated with the semantic notion of [purpose], this paves the way for reanalysis as a syntactically required element – first as a complementizing particle, and eventually as little more than a morphological marker of the infinitive. As in English, the typical citation form of a verb in modern Romanian is with its infinitival marker, e.g. a zice “to say”.

The philological evidence from the earliest available Romanian texts, from the 16th century, appears to confirm this sequence of events. At this stage, the transition is not yet completed, and several examples of a+infinitive used as a purpose adjunct, as in (9), can be found.

(9) ... ce-mi era dăruiţ de Dumnezeu a da la această lucră
... rel.pron.+to.me was given from God A give-INF to this work
“... which was given to me by God to dedicate to this work”

Crucially, purpose clauses with a are the only type of infinitival adverbial found regularly at this time.
Whilst this construction is no longer available in modern Romanian, usages in which there is a degree of semantic overlap or ambiguity as to whether the infinitive is a purpose adjunct or a complement, as discussed for Spanish aprender in Section 4 above, survive. In the 16th century we find carei sunt [... învățați a+infinitive\textsuperscript{10} “those who are taught to”, used much in the same way as a învăța a+infinitive "to learn/teach to" today.

But already in the 16th century, a+infinitive has extended its domain to contexts in which it is devoid of any final meaning, as for instance in the subject complement of the impersonal expression mai bine e “it is better”:

\textbf{(10)} mai bine e a grăi cinci cuvinte cu înțeles...\textsuperscript{11} “It is better to say five comprehensible words...”

This synchronic snapshot of the different usages of the infinitive in 16th century Romanian supports the assumption that the predominant association of infinitival adjuncts with final meaning would have been the basis for a to be the only preposition regularly found with the infinitive, allowing it to become the sole complementizer/marker of the infinitive.

In modern Romanian, the link between a and the notion of purpose is entirely severed. Niculescu (1978) lists a number of verbs that attach an infinitival complement with a for which reanalysis of a purpose clause is not a likely origin, as for instance in the case of a înceta a+inf., a sfărșii a+inf. (both “to finish”).\textsuperscript{12} Even more strikingly, a obligatorily precedes the infinitive even in the presence of a different, semantically unrelated preposition – further evidence that it has become fully grammaticalized.

\textbf{(11)} Am început-o înainte de a câștiga. “I began it before winning.”

Whilst a has become uniquely associated with the infinitive, it should be noted that other prepositions, typically de (but also la and în), function as complementizers for the so-called ‘supine’, a further non-finite verb form. However, its function cannot be said to correspond to that of de+infinitive in other Romance languages, as the choice of supine instead of a finite or infinitival verb form is primarily triggered by its specific aspectual nature.\textsuperscript{13}
5.2 Maintaining a balance between several complementizers

While we have seen that Romanian goes down the path of analogical levelling and strong grammaticalization, in most other Romance varieties the development of prepositional complementizers is somewhat different.

As shown in Section 4 above, the semantic content of different verbs makes different types of adverbials more likely to be pragmatically relevant, and this in turn calls for the semantically appropriate preposition to overtly mark in which way the adjunct relates to the matrix clause.

In languages such as Spanish, Portuguese, Catalan, Italian, and French, these different prepositions have undergone the shift from full preposition to complementizer individually, with individual verbs being associated with a particular prepositional complementizer on a lexical basis. Analogical leveling, as seen in Romanian in Section 5.1 above, has not taken place across the board, and we are left with a wide range of prepositional complementizers. There are also numerous verbs that take a complement without a complementizer. (Port. *creer*+inf. “to believe”, Cat. *deixar*+inf. “to leave, let”).

That is not to say that each verb has one unique or unchangeable pattern for forming its infinitival complement. A great deal of change and fluidity can be observed, both diachronically and synchronically, among different Romance varieties, and even in the speech of a single speaker. Such variation between prepositional complementizers is especially visible in medieval texts. This would suggest that the process of grammaticalization is not yet entirely completed at the time, and speakers still chose different complementizing prepositions to make subtle meaning differences. A verb such as *acordar* “to decide”, e.g., can take any of the prepositions *a*, *de*, *por*, or *en* as a complementizer for the infinitive in Old Spanish (Beardsley, 1921:106, 168, 208, 247).

The crucial point is that the majority of Romance languages has maintained a balance between several competing patterns of infinitival complement syntax, and it appears that, to a certain extent, a link between the meaning of the original preposition and the choice of complementizer has been retained. Figure 1 shows the statistical development of the two most important infinitival complementizers in Spanish, *a* and *de*, through time, based on a diachronic corpus containing a total of 150,000 infinitives. The considerable overall increase of both these types of prepositional infinitival complement is a reflection of how their increasing degree of grammaticalization allows them to become the default choice with an increasing number of matrix verbs. At the same time, the way in which both curves show a parallel development reflects the fact that a balance between them is maintained, and neither of the two shows any signs of losing ground.

It should be noted that in a similar study by Schøsler (2000:197) on French, a somewhat different development of *à*+inf. and *de*+inf. is observed, with the num-
ber of construction types and actual ‘tokens’ with à rising in Old French, but then dropping to a comparatively low level since the 14th century, whilst de only begins to spread from the 14th century onwards, becoming the dominant prepositional complementizer in the modern language. Unfortunately, an analysis of the pragmatic factors involved in this evolutionary pattern is beyond the scope of this paper.

6. Supporting evidence from current ongoing processes: *para/pra* as emerging complementizer in Portuguese

Up to this point it has mainly been attempted to reconstruct the sequence of events leading to the present day distribution of prepositional complementizers, but our lack of documents from the time when the greater part of this change took place makes definite conclusions virtually impossible. However, if it is possible to identify and analyse similar processes that are currently observable, this will lend credibility to the reconstruction put forward above.

In standard Portuguese, causative verbs generally do not require a prepositional complementizer, as in (12):

\[
\text{(12) Deus a todos manda ser bons.} \\
\text{God to all order-3RD.SG.PRES be-INF good-PL} \\
\text{“God orders everyone to be good.”}
\]

But the preposition *para* (or rather its phonologically bleached form *pra*) is increasingly coming into use as complementizer for infinitival complements of causative verbs, as in (13):

\[
\text{(13) A palavra de Deus nos ordena para crescer e} \\
\text{The word of God to.us commands for grow-INF and} \\
\text{multiply-INF} \\
\text{“The Word of God orders us to grow and multiply.”}
\]
Sentences (14) and (15) are semantically equivalent:

(14) *Ordena* Ø *fazer orações.*

(15) *Ordena pra* *fazer orações.*

```
order-3rd.sg.pres (for) do-inf
```

"He gives orders to pray."

This development can be explained as follows: in sentence (16), the pronoun *-o* is the direct object of *ordenar*, whilst the phrase in square brackets is a purpose adjunct (n.b. the purpose of a command is of frequent pragmatic relevance).

(16) *Ordenou-o* [para o João *fazê-lo.*]

```
order-3rd.sg.past+it [for art John do-inf+it]
```

"He gave the order, so that John would do it."

Sentence (17) is semantically equivalent to (16); phonologically it differs only very slightly, but the structure is rather different, as *para o João* is now the indirect object of *ordenar*, and *fazê-lo* is its direct object.

(17) *Ordenou* [para o João] [fazê-lo].

```
order-3rd.sg.past [for art John do-inf]
```

"He gave the order for John to do it."

The next step is a reanalysis of *o João* as the subject of the infinitive *fazê-lo*; infinitives regularly have overt subjects in Portuguese. This would effectively leave *para* without a function, but the problem is resolved by reanalysing it as a complementizer, as in (18).

(18) *Ordenou-lhe* [pra [o João *fazê-lo*]].

```
order-3rd.sg.past+io.pron [comp [art John do-inf+it]]
```

"He gave him the order to do it."

Once *para* is reanalysed as a complementizer, it can occur in this function with less complex infinitival complements, too, as in (19).

(19) *Ordenou-lhe* [pra [fazê-lo]].

```
order-3rd.sg.past+io.pron [comp+it]
```

"He gave him the order to do it."

We can thus observe how a process very similar to that described in Section 4 above takes place in modern Portuguese: an adjunct that, due to its pragmatic relevance, is closely associated with the matrix verb is subject to structural reanalysis, and as a result the preposition takes on a new syntactic function, that of a complementizer.
7. Conclusion and theoretical implications

One issue raised in this paper is the often neglected effect of pragmatics on syntax, and in particular the importance of taking into account what speakers are likely to say, rather than what they could conceivably say.

From a theoretical point of view, it is perhaps most important to note that we are dealing with an intrinsically gradual process. High pragmatic relevance triggers a gradual reanalysis of more peripheral elements as increasingly central to the argument structure of some verbs, a process during which the clause is neither a prototypical adjunct, nor a prototypical complement.

This implies that a number of traditionally dichotomous concepts such as preposition/complementizer, NP/VP, and complement/adjunct can be no more than cornerstones spanned by a continuum between them, and any syntactic theory that does not take this into account will not be capable of offering an adequate description and analysis of all phenomena encountered in natural language.

Notes
1. “In Romance the present participle (in -NT-) and the gerund(ive) (in -ND-) tend to merge” (Posner 1966:175)
2. “The Ablative Absolute is an ablative phrase, the logical relation of whose content to that of the main statement is not explicit.” (Nutting 1930:205).
3. This construction does not appear to be a continuation of Latin IN+gerund, instead emerging and gaining popularity independently at a later stage.
4. Spanish en+gerund has been claimed to be “virtually extinct in modern educated usage” (Butt & Benjamin 1988:264), but can nevertheless be encountered in colloquial speech.
5. ‘Pragmatic relevance’ is used here in a way compatible with the basic conditions for relevance proposed by Sperber & Wilson (1986, 1987:702–704).
6. In formal syntactic frameworks such as G&B Theory, this would appear to be problematic because case would have to be assigned by the preposition in a purpose-adjunct, but by the matrix verb if we are dealing with an object clause. However, the absence of any overt case marking casts some doubt on the degree of reality of such formal constraints in a language such as Spanish. Conceivably, in the absence of any formal conflict, case could even be assigned by both in equal share.
7. See e.g. entry no. 4 for to in Porter (1913:1513).
8. To the present day, a does not precede the infinitive in indirect coreferential wh-questions and the modal construction a putea+inf. “to be able to”; it is also no longer present in the periphrastic future construction, where it is, however, sporadically found in 16th century texts.
12. These infinitive usages are not commonly found in the spoken language, as they are generally perceived as literary and archaic.
14. To claim that there is, in fact, a null-complementizer present is not a helpful approach in a study attempting to trace the lexical origin of individual complementizers.
15. European Portuguese speakers prefer the use of ordenar without the complementizer; the usage in example (11) is more typical of Brazilian Portuguese.

References


Early Nordic language history
and modern runology

With particular reference to reduction
and prefix loss

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1. Prospectus

It is generally argued on comparative grounds that a whole set of unstressed pre-
fixes vanished in the course of Nordic language history with few or no traces (cf.
ON sinni “follower” vs. Go ga-sinþa, OHG gi-sindo; cf. Seebold 1974). In Nordic
grammars and handbooks (e.g. Heusler 1932:40–41; Haugen 1982:189–190), this
loss has been given due attention. However, the chronological setting of this left-
hand reduction is highly disputed and its background remains to be investigated.

The aim of this paper is to shed light on the dating of Nordic prefix loss and its
chronological relation to right-hand reduction (connected with the terms ‘syncope’
and ‘apocope’). Since the Early Runic language of Scandinavia plays a prominent
role in this discussion, the two tendencies of left-hand and right-hand reduction
will be dealt with largely from a runological perspective. As for stress assignment,
it will be claimed that the general dichotomy of stressed versus unstressed prefixes
has to be extended by an intermediate category involving secondary stress. This
claim will be substantiated by several kinds of source-based evidence including the
Older Runic inscriptions and Old Norse poetry.

1.1 Terminology

Traditionally, the language of the Older Runic inscriptions is labelled as ‘Proto-
Norse’, or ‘Proto-Nordic’ (German Urnordisch). However, the fact that this lan-
guage is attested in a corpus of inscriptions runs counter to a proto-language. In
addition, the linguistic status of this Old Germanic variety is not firmly estab-
lished, and the scholarly debate on Northwest Germanic versus Nordic is far from
over. To avoid any terminological misfit, alternative labels have recently been put
forward, ‘Old Runic’ (Boutkan 1995), ‘Early Runic’ (Nielsen 2000) and ‘Ancient
Nordic’ (Faarlund 2003) among others. Note that there is no direct correspon-
dence between ‘Early Runic’ and ‘Ancient Nordic’: ‘Early Runic’ technically refers
to the register of runic knowledge and production (a restricted domain of use),
whereas ‘Ancient Nordic’ is more comprehensive. It may denote the early stage(s)
of a distinct North Germanic variety in general.

In the following, the term ‘Early Runic’ (abbr. ERun.) will be used to designate
the language of the older runic inscriptions (150–500 AD) which is characterized
by considerable conformity and stasis. Diametrically opposed is the language of the
subsequent period (500–650 AD) which is marked by on-going linguistic change
and dialectal diversification, hence the label ‘Transitional Runic’ (abbr. TrRun.).
A comprehensive definition of ‘Transitional’ relies on both linguistic and graphic cri-
teria, and the evidence suggests that language change generally precedes the graphic

2. Reduction and prefix loss: a general perspective

In a general view, an overall nexus between all kinds of reduction may be invoked
which is conditioned by the Germanic stress accent. The concentration of stress
favours the decline of all the unstressed and weakly stressed syllables, both pre- and
post-tonic. Reduction phenomena include vowel weakening (ranging from lowering
to centralization) and vowel deletion, viz. syncope, apocope and aphaeresis.
Classical grammars of Old Norse (e.g. Noreen 1923:135) treat the three processes
of syncope, apocope and aphaeresis under the heading Synkopierungsfälle. In a sim-
ilar vein, Vennemann (1995:194) creates the general label copatio to group the three
processes under the heading ‘copation processes’.

In a synchronic view, this interrelation is directly confirmed for New High
German, since vowel weakening occurs both on the left-hand and right-hand
side of the stem; cf. NHG Gemüse [gɔˈmyːza] with two schwa values (cf. Valentin
1978:380–385). The same is true of vowel deletion. The past participle NHG
geschwunden, for instance, is phonetically realized as [ɡɔʃwʊndən] in lento speech,
but as [ˈɡʃʊndə] (with a syllabic nasal) in allegro speech. This indicates that left-
hand and right-hand reduction constitute one coherent phenomenon. The loss
of pre- and post-tonic phonetic material therefore involves synchronous processes
which are motivated in one and the same way. In the following, however, it will be
shown that the runic language of Scandinavia provides evidence to the contrary.
2.1 Right-hand reduction

In the light of the runic evidence, the above-mentioned phenomena of vowel reduction pertain to the so-called transitional period of the 6th and early 7th centuries. Some innovative spellings in Transitional Runic are clearly indicative of vowel bleaching (cf. Schulte 1998:87–158; Rasmussen 2000:147). In view of this research, syncope reveals itself merely as schwa deletion. The high front and back vowels /i/, /u/ in post-tonic syllables are blurred, i.e. gradually lowered and centralized, thereby losing their chromatic value. This tendency of quality reduction is evidenced by certain graphic peculiarities of the transitional inscriptions (see (1)–(3) below).

Runic examples of vowel bleaching

1. _gino-ronoR_ (KJ 96 Stentoften) vs. _ginA-runAR_ (KJ 97 Björketorp), both from ERun. */gίn:u-run:xR/ “mighty runes” vel sim., show progressive weakening of connective */-u-/, */-u:/, an u-stem adjective seen in OE _gim(e)_ “extended” < pre-Gmc. */gimw-u-, root of NHG _gäh-nen_); underlying phonetic forms [Ágin:u:run:xR] vs. [Ágin:u:runAR].

2. _felAhekA_ (KJ 96 Stentoften), for ERun. */féluh(-)eka/ “I hide”, vs. _fAlA-hAk_ (KJ 97 Björketorp), for ERun. */fáluh-ek(a)/ “I hid”, confirm the process of continued weakening between the two intimately related Blekinge inscriptions; underlying phonetic forms [Áfelu:xh-ekAR] vs. [Áfal:xh-akAR].

3. _sigimArAR_ (KJ 59 Ellestad), for ERun. */Sigimá:riR/ a proper name, contains the reduced second element */-má:riR/ as attested in ERun. _wajemáriR_ (KJ 20 Thorsberg); cf. ON _márr_ “famous”; underlying phonetic form [Ásigimá:riAR].

Note that there are no misspellings, epenthetic vowels or variations of theme vowels involved, as assumed e.g. by Krause (1971:146) and Antonsen (1975:15, 82). Neither is there any basis to invoke ‘orthographic confusion’, although this claim is made by Antonsen (1978:284–288). On the whole, these reduced transitional forms involve regular graphemic representations conveying the idea of phonological mergers of originally distinct vowels /i, u, a/ (see (4) below). Different stages of reduction are evident. The final phase of progressive weakening is marked by schwa deletion, i.e. syncope and apocope, roughly datable to 600 AD or slightly later (cf. Birkmann 1991:290).
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(4) Spelling evidence for merger-in-schwa and merger-in-zero

\[
*i/*u/*/a/ \Rightarrow <i/ u/ a> \quad \text{(cf. KJ 20 -mariR; KJ 27 ginu-; KJ 96 -ekA)}
\]

\[
/o/ \Rightarrow <A/ a> \quad \text{(cf. KJ 59 -mArAR; KJ 97 ginA-, KJ 97 -Ak)}
\]

\[
Ø \Rightarrow Ø \quad \text{(cf. KJ 97 hAerAmAlAusR, bArutR)}
\]

The standard phonemic-graphemic relationship between the two runic graphemes <A/a> and schwa is also confirmed by the fact that these graphemes regularly denote schwa-like svarabhaktis in Transitional Runic (cf. Krause 1971:84–85). In view of the coalescences outlined above, the final step of vowel dropping is merely an incidence of schwa deletion (see (4) above). Therefore, merger-in-zero presupposes merger-in-schwa (cf. Schulte 2000:10–14). Cardinal vowels are only dropped after being successively weakened and blurred. As for dating, all these processes pertain to Transitional Runic (500–650 AD).

2.2 Left-hand reduction and stress assignment

Mainstream research favours the assumption that left-hand reduction (i.e. prefix loss) is datable to the transitional period. Based on the standard distinction between stressed and unstressed prefixes, Christiansen suggests

that the replacement of the unstressed prefixes by the particles of, um falls between Reistad and Eggja, and thus should be ascribed to the 5th or at the latest the 6th century. ... In the earliest period of the migrations, North Germanic most probably had a prefix system that corresponded in main essentials to those of East and West Germanic. (Christiansen 1960: 380)³

This widely held view may indeed be challenged, if a tripartite model of accent stress is invoked. Note the Old Norse forms given in (5) and (6) below which conflict with a strict bipartite stress distinction:

(5) preverbs ON fyr-, for-

ON fyr-biða, for-biða “forbid” (Skírnismál), fyr-nema (cf. Go fra-niman) “take away” (Lokasenna), fyr-banna “prohibit” (Skírnismál), fyr-muna “begrudge” (Brot af Sigurðarqvíða, Guðrúnarqvíða), fyr-gora “bewitch” (Grímnismál), fyr-telia “tell” (Vélospá, Codex Regius).

The verbal prefixes fyr-, for- which only occur in the Eddic lays are generally said to be unstressed (see e.g. Heusler 1932:16, 40; Christiansen 1960:356). This judgement is based on the observation that for-, fyr- do not alliterate in Eddic verse, hence the assumption of lacking primary word stress (cf. Bennett 1972:103). But total absence of stress on the other hand runs counter to the fact that the un-
stressed vowel system of Old Norse contains only three units /e, o, a/ (see Haugen 1949; Benediktsson 1962; Schulte 2002). The mutated vowel /y/ in ON fyr- (< PGmc. */furi-/) which is not included in this subsystem clearly demands a certain degree of stress, viz. secondary stress. Obviously, the prefixes for-, fyr- have the normal reduced stress which equals a simplex compositional element not receiving primary stress. The umlaut vowel is definitely not introduced by way of analogy (from the preposition fyrir), as Christiansen (1960:356) assumes without further reasoning: “Omlydsvokalen er analogisk etter fyrir”. This direction of analogical transfer has no parallel in Old Norse and violates the natural constraints of unstressed syllables in terms of markedness. In general, unstressed syllables demand unmarked vowels whereas the secondary vowel /y/ is highly marked as [+front] [+high] [+rounded]. Therefore it must be introduced through i-umlaut in the secondary stressed syllable */furi-/.

(6) nominal prefix ON ó-, ú-, ODan. u-, OSw. o.< ERUN. un-
ERUN. un-wod(i)R “the one without rage” (KJ 12 Gårdslösa), un-gandiR “the one who is not exposed to charm” (KJ 65 Nordhuglo), TrRun.

u-ÅArAbAsB “harmful prophecy” (KJ 97 Björketorp).

The privative Gmc. un- is represented by the two variants ON ú- vs. ó-, e.g. öhreinn ~ úhreinn ‘dirty’. This Nordic split into o-, u- is said to depend on the accent (see Heusler 1932:41; Haugen 1982:36; cf. furthermore Bennett 1972:103). It will be remembered that initial primary stress is evidenced by alliteration in the Edic lays (e.g. öggn all “all kinds of harm”, Helgaqviða Hundingsbana I, 41). However, the stress correlation of these two variants ó-, ú- is not proven, and it is unclear which of them is due to primary stress and which one to secondary stress. Noreen (1923:47), for instance, claimed that ó- arose under primary stress, while Brøndum-Nielsen (1950:168) argued the same for ú-. Provided that the standard interpretation is correct, the prefix un- furnishes additional evidence of different stress levels.

2.3 A parallel from Standard German

The argument in favour of at least three different levels of prefix stress can be further strengthened by the adduction of parallels from living languages. Standard German with its well-developed Germanic verbal prefix system may function as the test case (cf. Kohler 1995:187). First, there are the entirely unstressed (inseparable) prefixes such as ge- (geschwunden) and be- (beschuldigen), er- (erlauben), ver- (verschwinden), zer- (zersetzen), which are further reducible in allegro speech (cf. 2. above):

(7) e.g. NHG geschwunden [gøʃvʊndən] → [ʃvʊndən]
Second, there are the adverbial and prepositional elements, e.g. über-, unter-, hinter-, durch-, um-, which may receive weak or full stress according to circumstances. Hence the word pairs:

(8) *umfahren* “run down” : *umfahren* “drive round”  
(Mangold et al. 1990, 737)  
*übersetzen* “pass over” : *übersetzen* “translate” (Mangold et al. 1990, 735)

It is important to note that the vowels of the prefix formations listed in (8) are by no means reducible to schwa or zero. Thus they are diametrically opposed to the unstressed prefixations of type (7). Without further delving into these matters, it seems obvious that the different accentual patterns of Modern Standard German prefixation support the assumption of different stress levels within the prefix system of Old Germanic (including a degree of weak or secondary stress).

2.4 The loss of unstressed prefixes

In the light of the evidence presented under (5) and (6), at least three degrees of stress are to be distinguished for the Nordic prefixes, viz. primary, secondary and weak (for Old Germanic, cf. Bennett 1972:103). In default of any counter-evidence, it can now be argued that all unstressed prefixes had already vanished in Early Runic (for a similar view, see Krause 1971:136). It follows as a corollary that the few prefixes found in the Older Runic inscriptions bear primary or at least secondary stress. Thus, the remaining evidence for runic prefixation has to be re-analysed under this new focus.


According to the general view, the Reistad inscription (KJ 74) offers the only attestation of a verbal prefix in Early Runic. The sequence in question is unnam wraita “undertook writing” which presumably contains a preverb un(d)- (< Gmc. unð-/unþ-), as mirrored in OE underneman and MHG unternehmen (on a different semantic interpretation, see Eyþórsson 1999). The total assimilation of the consonant cluster *[nθ+nθ] > [n+n]* in ERun. un-nam, which is based on phonetic attrition, has been paid due attention to (cf. Christiansen 1960:351; Eyþórsson 1999:191). Note that the standard equation ERun. un-nam wraita = NHG unter-nahm das Schreiben yields the earliest attestation of a function verb in Germanic (on this verbal class in German and Scandinavian, see von Polenz 1963, 1987; Naumann 1992).
The crucial issue relates to the stress pattern, and it can reasonably be argued that **unnam** bore initial secondary or primary word stress (underlying phonetic form \([\text{un}(\text{ð})-\text{nam}]\) or \([\text{un}(\text{ð})-\text{nam}]\)). Full initial stress provides a trochee which is the prevalent rhythmic structure of Early Runic (see 2.5). This claim is substantiated by Old Norse formations containing the prepositional adverb *undir-* (see (10)).

(10) **ON undirstanda** = ModE *understand* (see Fritzner 1973 III:788, s.v.)
Initial stress on preverbs is further confirmed by Swedish Runic and later Old Norse forms containing the prefix *um(b)-* \(<\text{Gmc. */umbi-/}\) (see (11)–(13)).

(11) **SwRun. u(m)bfatlaðR** "girded around"
(Rök inscription; cf. Grønvik 1983:138)
Contrary to what Christiansen (1960:358) claims, this compound bears initial word stress and hence does not contain an unstressed preverb. Compounded participles of this type are also common in Old Norse (see (12)).

(12) **ON umgyrðr** "girded (e.g. with a sword)", **umgefinn** "surrounded" (see Fritzner 1973 III:775, s.vv.)
In addition, there is a group of verbs with the stressed prefix *um-* (see (13)).

(13) **ON umbæra** "be indulgant", **umbéta** "improve" (see Fritzner 1973 III:771, s.vv.)
Note, however, that some compounded verbs with initial stress may be based on new configurational structures due to word order change in Old Norse (see (14) below). Therefore, the Old Norse evidence may partly be invalid for Early Nordic.

(14) **ON frá hverfa** "disappear, withdraw":
    *Munum vér frá hverfa ánni*.
    MOD we prep VERB river-dät+ārt
    "we will withdraw from the river" (see Faarlund 1995:70)
In addition, the stress pattern of prefix verbs can follow the underlying compound nouns, hence the primary word stress (see (15) and (16)).

(15) **ON ummerki** "boundary" – *ummerkjja* "bound" (see Fritzner 1973 III:777, s.vv.)
(16) **ON umbód** "authorization" – *umbióða* "authorize" (see Fritzner 1973 III:771–772, s.vv.)
On the whole, however, the evidence given under (10) to (13) supports the claim that we are dealing with a stressed preverb *un(ð)* in ERun. **un-nam** (9).
2.5 Metrical structure in Early and Transitional Runic

The basic metrical unit of the older runic inscriptions is the trochee, i.e. the bounded, left-dominant metrical foot (cf. Fox 2000:162–163). This rhythmic structure is favoured both at word level and at sentence level. Inscriptions such as KJ 43 Gallehus display this basic metre (cf. also Naumann 1998:702).

(17) ek hlewagastìr holtiáR horna tawíodo (Gallehus KJ 43)
“I, Hlewagastiz from Holta, made the horn.”

Apart from the sequence of unstressed syllables in holtiáR and tawíodo, this yields a regular trochaic pattern. It is also noteworthy that the Ellestad inscription (KJ 59) obtains a perfect trochaic metre by means of hypercorrect forms (a proclitic variant ekA for ek and a redundant clitic -kA in rAisidokA), thereby avoiding irregularities in performing the syllabic trochee. These metrically conditioned hypercorrections convey a perfectly regular rhythmic structure (see (18)).

(18) ekA 'sigi, MáArAR ... rAisi, dokA stAinAR ... (Ellestad KJ 59)
“I, Sigimaraz, ... I raised the stone ...”

In both these inscriptions, prefixations such as *ga-tawíodo (for tawíodo (17)) or *uR-rAisido (for rAisido (18)) would have disturbed the metrical structure and have been avoided for this reason.7

2.6 The expletive particles of and um in Old Norse

More than seventy years ago, Kuhn (1929) and Dal (1930) analysed the particles of and um in Old Norse metrical texts, claiming that they functioned as a substitute for the lost unstressed prefixes (for statistical analysis cf. Fidjestøl 1989). Hence, the term ‘expletive particle’ (Füllwort) came into being. The unstressed rhythmic particles of and um provide a metrically distinct “Senkungssilbe” in connection with a subsequent stressed syllable (cf. Heusler 1932:40–41; Grønvik 1985:74–75). Following Old Norse metrics, of and um precede a verb which bears a metrical accent (cf. Grønvik 1985:164). The expletive particle of (ob) is first attested in Transitional Runic (see (19)).

(19) TrRun. ob kam “came” (Eggjá KJ 101)

According to Kuhn (1929) and Dal (1930), of and um are historically-based reflexes of preverbs in metrical contexts (including poetry and proverbs). It is, however, highly improbable that the phonetically and functionally weakened prefixes were simply ousted and replaced by the particles of, um, before they vanished (cf. 2.2). Christiansen (1960:358) has previously noted that the insertion of these particles is not always strict (cf. (20)).
(20) SwRun. burnar in the Rök inscription : ON um borna in Völuspá, 2.

Inconsistency of this kind undermines the traditional notion of historically-based substitution. In a diachronic perspective, the direct continuation of unstressed prefixes by expletive particles may indeed be challenged. Accordingly, the metrical use of these semantically empty particles by no means contradicts the idea of early prefix loss.

3. Conclusion

In this paper, different reduction phenomena were related to the innovative spellings of Transitional Runic. It was argued that the current phoneme-grapheme relationships of the transitional period involve schwa as the result of several phonemic mergers. Concerning left-hand reduction, the claim was made that the standard distinction between stressed and unstressed prefixes is insufficient and needs to be extended.

A re-analysis of Early Nordic prefixation results in new stress assignments which are opposed to those of traditional research. Given all the problems raised by the general lack of verbal prefixes in Early Runic, the remaining occurrences of preverbs in early Old Norse literature (especially in the Edda) widen the focus and deserve scrutiny. As shown above, there is clear evidence in favour of three levels of prefix stress. Arguably, none of the prefixes preserved in the runic corpus and in early Old Norse literature is entirely unstressed. As a corollary, it is reasonable to argue that the sweeping reduction of unstressed prefixes is prior to right-hand reduction and even predates Early Runic. It follows that Nordic prefix loss is one of the earliest distinct traits of North Germanic which signals its split from West Germanic. I am well aware that this is not the standard view, but suggest that the theory concerning the expletive particles of and um advanced by Kuhn (1929) and Dal (1930) is in need of revision.

Notes

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1. In traditional terminology, ‘Early Runic’ is referred to as ‘Early Proto-Norse’, and ‘Transitional Runic’ as ‘Late Proto-Norse’, corresponding to German Frühurnordisch and Spätturnordisch (cf. Krause 1971:15–16).

3. For the expletive particles of and um, see §2.5 below.

4. The modern Scandinavian dialects have been subjected to levelling of one or the other variant (cf. Haugen 1982:36).

5. Only few scholars (e.g. Grenvik 1996:61) are optimistic about finding unstressed prefixes such as *ga- in Early Runic, e.g. in the opaque sequence gagaga on the Kragehul spearshaft KJ 27 (consisting of three bind-runes ga).

6. It may be noted in passing that Old High German follows the same metrical pattern but tends to level the accent peak by 'suspended' or 'transposed accentuation', i.e. schwebende or versetzte Betonung (see Ranke 1948:531–539).

7. As for Gothic, the preterite gatawida is attested in 1 Cor. 1:20: dhula gatawida (emœranen) “made foolish” (cf. Eyþórsson 1996:109).

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On the interpretation of early evidence for ME vowel-change

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1. Introduction

This paper is concerned with the interpretation of a number of ME long-vowel changes and of the written evidence for them. Some ME long-vowel changes have traditionally been grouped together and referred to as the ‘Great Vowel Shift’, by which all non-high vowels are raised one step, and the high vowels are diphthongised. Traditionally, the early stages of the shift have been dated to around 1400, and the shift is supposed to have been completed by around 1750. The traditional account also sees the GVS as unique to and within English, and as confined within specific temporal and chronological limits. It is seen as a unitary event, with its own inner coherence. It is therefore in need of its own special explanation. This view, that the term ‘the GVS’ is not an abstraction, but refers to a real event, has been held by scholars such as Lass (1976, 1988) and Strang (1970).

Another group of linguists, headed by Stockwell and Minkova (Stockwell 1961, 1969, 1972, 1978; Stockwell & Minkova 1988a, 1988b), but including Frankis (1988), Johnston (1992) and Smith (1993), have argued that although there is no doubt that the phonetic changes making up the GVS did happen, the GVS is not a unique event. On the contrary, the GVS as a phenomenon is a historical construct, created with the benefit of hindsight. I adhere to the latter view for the following reasons: (1) most of the Gmc. languages have undergone similar long-vowel shifts; (2) the same sorts of long-vowel changes have been occurring in English, or the precursor to English, from the Gmc. period to the present day; (3) there are different outcomes of the GVS in the various dialects of English.

In this paper, I propose to use material from three surveys and atlases of ME dialects to confirm some of Stockwell’s earlier claims. It seems that this material indicates that at least some of the so-called ‘GVS’-changes began considerably before
1400. What is more, two other long-vowel changes took place earlier in the ME period, but these are apart from the ‘GVS’, although their nature is fundamentally similar. I am here thinking of the Southumbrian backing and raising of OE ā to ɣ, and of the Northern fronting and raising of ɑ to ɣ. These two changes are usually assigned to ca. 1225–1350. But material collected from the above-mentioned surveys and atlases indicates that these changes were still in progress well after 1450, at least in some parts of the country (cf. Stenbrenden 1996).1

The same material gives a number of interesting forms for the reflexes of ME long vowels. There are for example such spellings as <a-beydin>, <breyt>, <leif>, <may Š th>, <weyte> for “abide” (OE ab¯ıdan), “bright” (OE beorht), “life” (OE l¯ıf), “might” (OE meahte/mihte), and “white” (OE hw¯ıt). Such spellings are most frequent in late ME, but they are not rare even in early ME. Obviously, some of this material has not gone unnoticed by previous scholars, but has simply been discarded as evidence of early vowel-change for various reasons. This is particularly the case for the high front vowel, which is my special concern here. It is therefore the object of this paper to investigate the validity of some of these arguments. I will also look at the orthographical and phonological systems in which the controversial forms occur.

2. Sources

A few words on my sources. The LALME, or the Linguistic Atlas of late Mediaeval English 1350–1450, should be familiar. This atlas offers linguistic profiles (LPs) of hundreds of MSS, each localised according to county. All types of texts have been used, unless the language in them was deemed too mixed or not local enough. The LPs are made up of a fixed number of items which are checked for each MS. The material is organised on a lexical basis, although much phonological material may be abstracted from it, and some of the categories of survey are overtly phonological. This is particularly the case for the southern half of the country.

Kristensson’s A Survey of Middle English Dialects 1290–1350 makes use of the Lay Subsidy Rolls or of similar material when the Subsidy Rolls are lacking for a particular area. The Lay Subsidy was collected all over the country, at times fixed by parliamentary grant of such subsidies. The Lay Subsidy Rolls were records of tax payments by person, district by district, and they therefore offer local material on names and place-names. (Tax payments were often recorded by non-local officers, and the idea is that as they heard the unfamiliar-sounding names of the tax-payers and the places they came from, they would record exactly what they heard.) The original rolls are nearly all lacking.
The LAEME, or A Linguistic Atlas of Early Middle English, is a work in preparation by Dr. Margaret Laing at the University of Edinburgh. It is intended to complement the LALME, covering the period 1100–1350 for all of England, although the surviving material is unevenly distributed across the country. Material appears in relatively great numbers in the South-West Midlands and South-East Midlands, in smaller numbers in the Central Midlands and the South, and hardly at all in the North and North Midlands. The LAEME consists of entire tagged texts; i.e. each and every word is tagged for word-class and morphology. This increases the possibility of finding forms which could be phonologically interesting.

Another advantage of computerising entire texts, is that not only the interesting forms themselves are made available, but that the orthographical systems in which they occur may be abstracted and the phonological system inferred for every single MS. This is crucially important when investigating a period in which there is only written evidence for sound-change, and in which there is no standard spelling, but rather a number of localised standards or even individual orthographical systems (consider, for example, the very individual spelling system of Orrm).

3. Discussion

The simplest way to proceed would be to just accept the diverging spellings reproduced in my introduction as offering early evidence of vowel-change and leave it at that. But one constantly comes across the same arguments against using them, and since such authorities as Dobson (1957) clearly think they cannot be used, it is now time to investigate these claims in greater detail.

In his extensive discussion of the issue, Dobson investigates “Evidence apparently showing [ei] or [ei] for ME i” (1957: 662). The sources of this evidence are the following: (1) orthoepists; (2) occasional spellings; and (3) “alleged rhymes” between ei-words and i-words. I will treat each of these in turn.

1. Dobson discusses the statements of native orthoepists regarding the sound developed from ME i. According to Dobson, the early orthoepists all (with the notable exception of Hart (1526–1574)) describe a diphthongised sound, which is not surprising, since they were writing from the 1520s onwards. They all also seem to describe a diphthong where the second element is a tense, high, close vowel [i]. They all have problems describing the first element, however. They say that the first element is a “thinner (more obscure) sound”, or that it is a “feminine e”, or that the diphthong is a “foreign” [ei] or [ei]. Dobson concludes that what they are trying to describe, is a diphthong where the first element is not a front [e] or [e], but
a centralised schwa, and where the second element is the more prominent, hence [ai]. It is not hard to agree wholeheartedly with Dobson on this, judging from the pronunciation of the reflex of ME ĭ in non-standard varieties of English today: there are many Present-Day dialects of English where words like light or white are pronounced [lait] and [waɪt], as heard by the present writer in, for example, Edinburgh Scots and Ottawa Canadian English. The point is that the orthoepists, who did not have the services of the IPA available, tried, to the best of their ability, to describe a relatively new sound by means of the Roman alphabet, with its apparent limitations. The Roman alphabet had no letter specifically symbolising the schwa, so the letter with the nearest sound-value was e. Dobson himself appreciates this, observing that

> In these cases the identification does not mean merely that Latin ei or Greek ι were identified with ME ĭ in the English pronunciation of these languages ..., but that an attempt is being made to find means of expressing the degree of diphthongization; such statements are a pseudo-learned variation on the ordinary transcription ei. (Dobson 1957: 660; my italics)

A little further down on the same page he admits that there “are indications in various orthoepists that the transcription ei was only approximate”.

2. The occasional spellings are dismissed on the grounds that “they may be due to the variation between ei and ĭ in a number of common words such as eye and height” (1957: 662). That is, not a particular change, but simultaneous variation in the pronunciation itself, is seen as the mechanism behind the scribes writing <ei/ey> for ME ĭ. The logic seems to be that some words, among them height, were sometimes pronounced with a diphthong [ei] and sometimes with a monophthong [iː]. These were traditionally spelt with a diphthong <ei/ey>. Thus, the spelling <ei/ey> represented the phonetic reality [ei] as well as [iː]. Therefore, and this is the analogy, words whose pronunciation was only with [iː] may also be spelt with <ei/ey>. Spellings with <ei/ey> for ME ĭ thus do not indicate phonetic change, but are instances of the over-generalisation of a rule applying originally only to some words.

3. Moving on to the rhymes, Dobson maintains that all but one of the examples are cases of ME ĭ rhyming with the reflexes of OE eg. The only examples cited are side: leyde; by: wey. Dobson’s argument is as follows: since OE eg is commonly [ai] in the modern dialects, the development must have been OE eg > ĭg > ĭ. Therefore, these cases are examples of rhymes between ME ĭ and a raised and presumably monophthongised reflex of ME ei. In other words, these are rhymes between ME [iː] from ME ĭ and ME [iː] from OE eg, ME ĭg/i. An inspection of the reflexes of OE eg-words failed to produce any with Modern Standard English [ar]. The
words cited certainly do not have Mod. E. [ai]. The verb “to lay”, for instance, which has OE eg, still has [ei] in all parts. OE weg “way” has ME and Mod. E. [ei] (although dialectal [wai] is found). In conclusion, the rhymes Dobson cites are between words with ME i and Mod. [ai] on the one hand, and words with ME and Mod. E. [ei] on the other, i.e. laid, way.

It is here Dobson draws the conclusion that no rhymes between the reflexes of ME i and ME ei can be exact, since the two sounds never merged. His conclusion is sound, for nobody would argue the opposite. Clearly, identity of spelling need not entail identity of pronunciation. Besides, he himself has pointed out that the spelling <ei> for the reflex of ME i is only approximate. What is more questionable, is that he uses this conclusion to deny the diphthongisation of ME i altogether. What makes his dismissal of <ei>-spellings appear even stranger, is his argument concerning <ai>-spellings for the same ME i. In Note 4, he accepts rapid diphthongisation of ME i to [ai] in the East, and the consequent “confusion between dialectal [ai] < ME i and StE [ai] < ME ai” (1957:663). Hence, he does not discard <whrayt> for “write” in the Essex Cely Papers, and simply says it “seems to depend on the identification of an advanced pronunciation of ME i with a conservative one of ME ai” (1957:663). No mention is made of the fact that the reflexes of ME i and ME ai never became identical, which is the crucial point of his argument concerning <ei>-spellings for ME i.

Quite apart from the previous arguments, it also seems natural to ask: Why would any scribe use <ei/ey> as the spelling and let the words rhyme with ME ei-words, unless ME i really had diphthongised? For apparently, the scribes themselves found ME ei and the reflex of ME i sufficiently similar to use them in rhymes.

It therefore seems that Dobson’s conclusion is false and that the fact that the reflexes of ME i and ME ei never merged, is irrelevant in this context; it is simply a post facto observation, which does not take into consideration the traditional strong associations between sound and spelling, even in ‘ordinary’ literate people’s minds. Nor does it consider the serious limitations of the Roman alphabet when it comes to recording sounds unfamiliar to the Latin language. At any rate, the gist of my argument is that rhymes between ME ei and ME i, however inexact, go to show that the reflex of ME i actually had diphthongised.

I will now leave Dobson, and go on to Kristensson. His reasons for discarding <ei/ey>-spellings for ME i are different from Dobson’s. Kristensson’s view is that they are merely back spellings, “reflecting the change of OE ë + antevocalic ʒ into ME [i:]/” (Kristensson 1987:65). The history is that ɛ3 lost or more likely vocalised the postvocalic consonant, and raised the nuclear vowel to [i:]. At some point during this chain of events, presumably before the raising of the vowel, the sound came to be represented by <ei/ey>. After the raising of the vowel had taken place, the sound was still spelt <ei/ey>; i.e. the spelling <ei/ey> represented the phonetic reality [i:]. Therefore, since some [i:]-sounds were spelt <ei/ey>, the rule was ex-
tended so that all [iː]-sounds could be spelt <ei/ey>. These are therefore back or analogical spellings.

Thus, the conclusions are the same for Dobson and Kristensson, although they make use of slightly different arguments, and their conclusion goes: <ei/ey> for ME i cannot be used as early evidence for vowel-change.

This is a very serious claim, in that if one takes it seriously, almost none of the interesting forms for the reflex of ME i may be used as evidence for early vowel-change. So is there a way out? One argument is the following: if \[i\] > [iː] > [iː], there should be early occasional spellings with <i/y> for older \[i\], such as <hi/hy> for "high". This is not the case for early ME, where one would expect it. Such spellings do, however, feature in great numbers in late ME. Could <ey/eh/ei/ey> after all be the best written representations of the phonetic reality of the reflex of \[i\]? If that is the case, <ei/ey> for ME i could be phonetically motivated, although these are of course separate issues.

Stockwell (1978) and Stockwell and Minkova (1988a, 1988b) have been arguing for a long time that it could be the other way round. The large-scale merger between the reflexes of OE i, y, iy/h, yg, ig, iht, yg, yht (as in OE hwít “white”, brýd “bride”, stgent “stgy (in eye)”, ihtan “alight, dismount”, drýgan “dry”, nýgon “nine”, niht “night”, bygh “buys”, flýht “flight”) in the front series may have resulted in variant pronunciations of the high front vowel phoneme, such that some allophones were pure monophthongs, and others were more or less diphthongal. It is an empirical fact that when a diphthong has been produced, the phonetic distance between the first and the second element tends to become larger. This is referred to as ‘glide maximisation’ by Stockwell (1978) and ’diphthong maximisation’ by Labov (1994). It is very possible that this is what happened to the diphthongised result of the mergers in the high front area. The first element of the diphthong hence may have been on its way down in phonological space when the reflexes of eME i vocalised the consonant and were raised. If that is the case, this is where the merger may have taken place, at a point where [iː] (for /iː/ or /iː/) was still a phonetic reality, but where the majority of allophones had a lowered first element.

Another point is worth mentioning. We know that ME i did diphthongise at some stage. How would a scribe represent such a diphthong – what options were at his disposal? If he was trying to represent a minimal diphthong, he could write <i/i/i/y/i/e/i>e (after 3 had been vocalised); if the phonetic space between the elements of the diphthong had grown bigger, and the first element had not been rounded or backed, he would possibly write <ei/ey>, or even <ai/ay> if the first element had gone all the way down. All these spellings appear in the material.

Probably the best thing to do, and a necessary preliminary to making any phonetic inference from spelling at all, is to not look at the spelling-forms in isolation, but to consider the entire orthographical systems in which they occur. Only in this way can one infer the phonological system. This is obviously as immensely time-
On the interpretation of early evidence for ME vowel-change

4. A look at MS Oxford, Bodleian Library, Additional E.6, roll, Hand B

The part of the MS investigated here includes XV Signs before Doomsday and a Pater Noster, and has been dated to the last quarter of the 13th century by Dr. Laing, and the entire text has been tagged by her. This part of the MS is written in one hand, identified as Hand B, and the language belongs probably to Gloucestershire. It consists of 295 lines, mostly rhyming couplets, although the scribe does not seem to be very particular about his rhymes.

These are the relevant features of this MS:7

The dialect of the scribe shows the Southern change of a > æ (for example, <toknes> for "tokens", <ore> for older ār, <ston> for "stone", <more> for "more" etc.), although the change is obviously not complete, as shown by such examples as <gatʃ> for "goeth, goes", <saule> for "soul", <mast> for "most" (in non-rhyming positions). Reflexes of OE ecg, as the infinitive of "say" secgan and the present tense plural form secgap, are spelt with <sigg-> in seven out of eight cases; in the eighth case, "say" (the infinitive) is spelt with <ey>. The reflexes of OE ē, i.e. ME ē, are unvaryingly spelt <e>, though "here" is spelt with <e> twice, with <ie> once, with <i> three times, and with <o> once. Words with OE ēo are mostly spelt with <e>, but there are a few instances of <i>-spellings (OE læogan, tæon).

OE ōa is spelt with <e> or <a>, though OE ōah is spelt <ey> ("nigh", once) or <e3> ("high", once). The reflexes of OE or early ME -coht, -caht, -iht, and -yht (with or without metathesised r), are all spelt <ey/e3>, though there is one instance of "bright" spelt <bret>. ME ī is spelt variously with <i/y/e/y> with <ey> being just as frequent as <i/y>. ME ī in lengthening contexts is generally spelt <i>, but "mankind" appears as <mankeyn> once.

In this MS, <ei/ey> for ME ņi appears seventeen times (for example, in the words "abide", "betide", "life", "side", "wife", "wise"), of which eight appear in rhyming position. The rhymes are the following: <be-teyden>: <seyden> ("betide": "side"); <leif>: <wif> ("life": "wife"); <syeþe>: <lyue> (OE swīþe: "life"); <to-dreynuen>: <olyue> ("to drive": "alive"); <weye>: <liue> ("wife": "life"); <abeþd}: <seyde> ("abide": "side"). The remaining nine instances all appear in non-rhyming position. Of these, seven could not result from the scribe having been influenced/distracted by neighbouring diphthongal spellings. The last two could be the result of such influence, one appearing close to the spelling <awey> (< OE
“wei”, an interjection), the other appearing close to the spelling <reyt-weyssnesse> “righteousness”.

All etymological diphthongs are spelt with digraphs by Hand B, which suggests awareness of the ‘make-up’ of diphthongs on the part of this scribe.\(^8\) Finally, there are two other hands in this MS (Hands A and C), none of which shows the unconventional <ei/ey>-spellings for historical \(\ddot{i}\), suggesting that Hand B is being innovative.

5. Further corroborative evidence

It should be added that there is further evidence of early vowel-shifting in the LAEME material (as will be clear from the list of features from the MS investigated above). For example Oxford, Bodley Digby 4, from the first half of the 13th C and whose language belongs in Kent, shows frequent <ie> spellings for OE \(\ddot{e}\) and \(\ddot{e}\) (\(<bi> “be”\>; \(<i>-bien> “been”\>; \(<i>-sien> “see”\>; \(<life> OE \ddot{e}of “dear”; \(<hier> “here”\>). London, BL Arundel 248, from the last quarter of the 13th C and whose language belongs in Cambridgeshire, shows numerous <u> for ME \(\ddot{o}\) (<understud> “understood”; \(<mud> “mood”; \(<suth> “sooth”; \(<blud> “blood”; \(<gud> “good”; \(<wud> OE \ddot{w}od “mad”; also \(<hier> “here”). Cambridge, Emmanuel College 27, from the first quarter of the 14th C and whose language belongs in Wiltshire, shows some <ov, u> for ME \(\ddot{o}\) (<dov> “do” 2. sg. ps. ind.; <lus> “loose”; <rute> “root”, rhyming with <abute> “about”!). Hence, it seems reasonably certain that these changes started quite a bit earlier than most textbooks seem to think, but more work needs to be done before any definite conclusions may be drawn.\(^9\)

6. Conclusion

Even a close inspection of Hand B’s spelling system in MS Oxford, Bodleian Library, Additional E.6 seems not to close the deal. The interpretation of the unconventional spelling forms is still uncertain. What seems reasonably clear, however, is that it is the rhyming evidence between ME \(ei\) and ME \(i\) which is the most compelling proof of early diphthongisation of the reflex of ME \(\ddot{i}\), and which it is most crucial to investigate in more detail, although Dobson and Kristensson would explain these spellings otherwise. I realise that just presenting more of the kind of material they reject is hardly likely to convince scholars of their persuasion. But the points made in this paper at least imply that their arguments are not conclusive. Stockwell’s argumentation is familiar, and if the data are looked at in that light –
and given that we know ME ı did diphthongise at some stage – it seems certain that <ei/ey> need not be back spellings, but could be evidence of diphthongisation.

Besides, the sheer bulk of unconventional forms suggests that they cannot be merely dismissed as back spellings. For spellings with <ei/ey> for ME ı are by no means limited to the MS looked at. So far, the LAEME Database consists of 139 tagged texts. Of these, twenty-three show <ei/ey> for ME ı, and rather more show other irregular spellings for ME ı. The language of the MSS which have been localised belongs in the West Midlands and East Midlands mostly, though the North Midlands and the North are also represented. That is, there is some scattering of such forms throughout the country. Material from Kristensson’s Survey shows <ei/ey> particularly in the South-East Midlands, though some forms appear in the Central Midlands and in the North as well. With regard to late ME, the material in LALME shows a wide scattering of <ei/ey> all over the country (though they are particularly frequent in the South, in the South-East and South-West Midlands, and in Yorkshire). Therefore, since these spellings are not just occasional, but are rather frequent and widely scattered both geographically and temporally, it seems unwarranted to dismiss them offhand.

What seems certain, however, is that there is some temporal overlap between the assumed early change of OE ą > ę on the one hand, and the so-called ‘GVS’-changes on the other. The traditional chronology hence cannot be maintained, and one is almost forced to link the two sets of vowel-changes hitherto regarded as unrelated.

If this be feasible, it begs the question – Can all these vowel-changes, which collectively span a period of up to 500 years (i.e. 1250–1750), possibly be reifications of one and the same ‘event’, or are they rather a set of individual, though similar, changes?

If the latter is the case, then there is not one ‘shift’, but two, or several, to account for, which seems to go against the principle of Occam’s razor. But if the vowel shifts are broken up into their constituent parts, it will be apparent that there are actually several processes involved in long-vowel shifting, i.e. raising, fronting, and diphthongisation, as well as backing and rounding. This means that the number of explanations required to account for the various kinds of change has been limited to five, one for each of the processes mentioned above (or four, if backing and rounding are part of the same process). Obviously, these explanations can be invoked for all similar changes throughout the history of English, from the earliest times to the present day. There is therefore in fact an overall gain in economy and simplicity. Furthermore, this approach favours the view that vowel shifting or vowel-change is a natural, iterative, and on-going process that is part of the nature of the English language.
Notes

1. For the change of OE ǣ > ȝ, for instance, LALME yields a number of <a>-spellings from Southern MSS. Thus, <æwen> “own” aj. (<OE ðægen> in LP 8430 (Shk), and <áwen> in LP 5040 (Dvm); <æual> “soul” (<OE sǽwol> in LP 65 (Wht). <ou/ow/u/v>-spellings for ME ȝ in Northern texts are traditionally interpreted as reflecting the change of ME ȝ > ȝ. Whether absence of such spellings implies that this change had not been effected or completed is a moot point (to be able to decide this, one would have to analyse the entire systems in which these spellings occur); in the LALME material, conventional <o/oo>-spellings are most frequent, even in Northern MSS. There are quite a few <ou/ow/u/v>-forms; these do, however, also feature in Southern texts, in which case they are usually interpreted as showing the change of ME ȝ > ȝ.

2. The atlas is not yet completed, but I spent a semester in Edinburgh, having full access to Dr. Laing’s computer corpus of processed texts.

3. Data from the Linguistic Atlas of Early Middle English Database of tagged texts is used with the permission of Dr Margaret Laing, Institute for Historical Dialectology, for the University of Edinburgh.

4. A present-day example might prove illustrative. In Edinburgh I saw a T-shirt with the picture of a mouse on it, and a text below it reading <a wee moose>. This reflects the fact that historical ȝ in certain Scots English dialects never diphthongised, so that “mouse” retains its high back vowel and is pronounced somewhat like “moose” with historicial ȝ is in other dialects of English. Any phonologist trying to work out the phonological system of Scots would be very wrong in assuming that the spelling <moose> for “mouse” indicates that the reflexes of historical ȝ and ȝ have become identical, but would be forced to take the spelling at face value, as a layman’s nearest equivalent to phonemic transcription, using present-day English spelling practice, and exploiting the fact that there are certain sound-values traditionally associated with the various spellings. (Indeed, Scots English historical ȝ occupies a high back position, whereas Scots English historical ȝ has become high and front (as in “book” [bük]), something which the above <moose> spelling does not capture.) Scots English and Standard English make use of the same spelling system. The various spellings are, however, associated with different pronunciations in Scots and in Standard English, but in a historically consistent manner. Thus, <moose> for “mouse” simply reflects the pronunciation traditionally associated with <oo> in Standard English, i.e. [u:]

5. Dobson does not say why he allows the vowel of these to be variable, but not the vowel of, for example, white, knight. However, eye and height have a vowel plus glide already in OE (<OE éage; hēahþu/hēahþo), and the conventional wisdom is that since these words all appear with Modern English [æi], they must have raised the vowel and lost the glide, before joining forces with etymological i, sharing its further development.

6. I assume Dobson really had the reflexes of OE eg in mind; if he was referring to the reflexes of OE -ēag-, the picture looks rather different. OE ēáeg “dye”, ēage “eye”, ëåeg “lye” of course have Mod.E. æ-at/. A table showing the reflexes of OE eg, æg, ëåg-, and ëab- appears at the end of this paper (Table 1).
On the interpretation of early evidence for ME vowel-change

Table 1. OE words with \(eg\), \(æg\), \(eag\), \(eáh\), and their modern correspondences. Actual ME occurrences are given in italics and preceded by dates (OED).

<table>
<thead>
<tr>
<th>OE eg</th>
<th>OE æg</th>
<th>OE eag-</th>
<th>OE eaḥ-</th>
</tr>
</thead>
<tbody>
<tr>
<td>bleg &quot;blain&quot;</td>
<td>brægd (pt) of breg-</td>
<td>bæg &quot;ring&quot;; cf. &quot;bagel&quot;</td>
<td>běah, (pt) of bůgan</td>
</tr>
<tr>
<td>bregdan &quot;pull; abraid&quot;</td>
<td>dan &quot;pull, abraid&quot;</td>
<td>ðæg, ðeigh</td>
<td>ME beiḥ, beiḥ</td>
</tr>
<tr>
<td>ege &quot;fear, awe&quot;</td>
<td>gefægen &quot;glad; fain&quot;</td>
<td>ēage &quot;eye&quot;</td>
<td>drēah, (pt) of dřeogān</td>
</tr>
<tr>
<td>legde &quot;laid&quot;</td>
<td>fæger &quot;beautiful; fair&quot;</td>
<td>čagor &quot;flood, tide&quot;; cf. &quot;eagre&quot;</td>
<td>dreāhnian &quot;drain&quot;</td>
</tr>
</tbody>
</table>
| legen "lain" | fægnian "rejoice, fain (obs.)" | lēag "lye" | Hist. spelling is dreen; 1000 drehn-, drenh-
| plegian "play" | frēgn, \(pt\) of fri-gan, "frayn (obs. or dial.)" | čagun "lying; falsehood" | fleā "flea" |
| regen "rain" | hæg "hail" | mèagol "firm, earnest" (< meag) | fleā, \(pt\) of flēon |
| slege "killing" (< slēan) | hrægl "clothing; rail (obs.)" | racentēag "chain, ra-kenteie"; 1297 raketeie | hēah "high" |
| tintreg "torture" 1240 tintoheh | lēg "lay" | smēag "think" | hēahfore "heifer" |
| þegen "thane" | møg "may" | smēag "smeigh (obs.)" | 1327 hāye |
| þegen, \(pp\) of pic-gan | møgen "strength" | tēag "enclosure" | hēah "enclosure" |
| þegnian "serve" | nægæl "nail" | getrēagian "sew together" | 1430 lēye, 1470 lee |
| weg "way" | sægd "said" | nēah "nigh" | 1205 leih, 1380 leirjede |
| spleg "slain" | | nēah "nigh" | |
| | | 1205 neih, 1390 nyh |
| | | | 1225 deh, deiḥ |
| | | | 1297 hēye |
| | | | 1000 drehn-, drenh-
| | | | 1205 fleih |
| | | | 1330 fleih |
| | | | 1225 fleih |
| | | | 1297 hēye |
| | | | 1430 lēye, 1470 lee |
| | | | 1205 leih, 1380 leirjede |
| | | | 1200 feiḥ, 1290 pei
| | | | wrēah, \(pt\) of wrēon |
| | | | 1275 wriēe inf. |
7. For the sake of clarity and brevity, only features that are relevant will be discussed. The
scribe uses, for instance, <e> for the reflex of ME ¯e, and <ou/u/v> for ME ¯u, but as these
are uncontroversial, they will not be dealt with further.
8. ME au is spelt <aw/auw>; ME ou appears as <ou>; ME ew is spelt <ew>. OE æg is spelt
<ay/ey> (the distribution is quite consistent: “may” and “day” are always spelt with <ay>;
“says”, “said”, and “rain” are always spelt with <ey>); French loans, such as saint, pain,
are spelt with <ey>.
9. This paper is based on work on a doctoral project on ME long-vowel changes. Further
investigations are being carried out at present, and conclusions will appear in a forthcoming
doctoral dissertation.
10. In terms of actual eME MSS, the figure is 276; if two or more MSS are in exactly the
same hand and language, they are amalgamated into one tagged text.

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On the reflexes of Proto-Germanic ai
The spellings ie, ei and ey in Middle Dutch

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Introduction

Reflexes of Proto-Germanic ai are usually written ei or ee in Modern Standard Dutch. The ei is pronounced as [ɛi], the ee as [eː]. Linguists claim that in Klein “little”, with [ɛi], an umlaut factor has seen to it that the second element of the ai was hardly able to influence the first element of the diphthong which, consequently, remained virtually intact in the standard pronunciation and in a great many dialects. However, when the umlaut factor was absent, as in steen “stone”, the first element of the ai tended to become almost completely close in anticipation of the second element. For details and references, see van Leuvensteijn (1998).

In this study we will examine the reflexes of Proto-Germanic ai on the basis of data culled from 14th-century charters, but only such charters that are dated and located. We will take into consideration the entire Dutch-speaking area. Frequent spellings for the reflex of Proto-Germanic ai are ie, e(e), ei and ey. We will interpret these spellings in terms of phonetic values. Since in preceding studies no distinction was made between ey and ei, we will especially pay attention to the distribution and interpretation of these spellings.

We examine spellings of words belonging to what we will call (1) the ee-series and (2) the ey-series:

(1) een, geest, meester, heten, gemeen, steen, vlees, deel, teken (“one”, “ghost”, “master”, “to be called”, “common”, “stone”, “flesh, meat”, “part”, “sign”).

(2) beide, eigen, heilig, klein, eik, weide, heide (“both”, “own”, “holy” “small”, “oak”, “meadow”, “heath”).
The ee-series comprises words for which it is claimed that the umlaut factor has played no part, as opposed to the ey-series. In the ey-series, it is assumed that in Proto-Germanic the stem was followed by a second syllable containing a [j] or [i] sound: the umlaut factor. However, gemeen sometimes is considered to have belonged to the series in which an umlaut must have been present, see Mooijaart (1992:142–145); the same holds with respect to vlees, see van Loey (1965:47) and also some other words. In this connection it is remarkable that Afrikaans has doublets such as gemeente and gemeinte, vlees and vleis, teken and teiken in which ee is pronounced as [eː], [e̞], [i] and ei as [ɛj] (Leroux & Leroux 1977:52; Coetzee 1985:48).

We claim with others that in the past ee was pronounced [ee], [e̞], [ei], [i] in words such as een, geest, heten as it still is in Afrikaans and in some Modern Dutch dialects. In Middle Dutch this ee was opposed to that in such words as geven, geeft (from geuet) “to give, (he) gives”, in which ee represented probably [eː]. Apparently, Afrikaans has generalized the pronunciation [ee], [e̞], [ei], [i], whereas Standard Dutch has opted for [eː].

In Section 1 we discuss the methodological aspects of our approach. In Section 2, results in terms of spellings are presented. These results are interpreted and discussed in Section 3, which also includes a discussion of the umlaut theory. Section 4 contains the conclusion. In this study we do not consider words such as twee, “two”, eerst “first” and eeuw “century”, in which Proto-Germanic ai is followed by r, w or when vowel-final. We also do not consider special cases such as discussed in Bremmer (1997).

1. Manuals and methods

As we have just observed, the most frequent spellings for the Middle Dutch reflex of Proto-Germanic ai in our corpus are ie, e(e), ei and ey. Marginally, we also find a, ai, ay, eey, y and i. We will attempt to assign phonetic values to all the spellings. In doing so, we differ from earlier approaches, in which the spellings ey and ei were always lumped together. However, the distribution of the two spellings both in space and in individual words is often far from arbitrary. We refer to Map 3 gemein and Map 6 meister (see Map 1–6) which confirm, we believe, this point convincingly. We have observed a similar pattern in the case of ui versus uy, see van Reenen & Wijnands (1993). At first sight it may look surprising that until now linguists have not observed the different distribution patterns of the four spellings. On further consideration, this oversight must be attributed to the methodology with which data used to be collected. Until recently, observations on spellings were based upon impressions, gained by reading manuscripts of literary texts, of which date and
On the reflexes of Proto-Germanic *ai*

place of origin were not known in any detail. And, insofar as they were based on
dated and located original texts, such as charters, the vast amount of information
contained in these documents could not be systematically processed in an era in
which the computer was not available as an auxiliary tool for corpus research. The
first linguist to have used a computerised corpus is Mooijaart (1992). However, in
her analysis of the 13th-century corpus of charters she does not distinguish *ei* and
*ey*. It would be interesting to test whether the distinction in distribution of *ei* and
*ey* is also found in these 13th-century charters, although for this century charters
from the northern and eastern parts of the Dutch speaking area are virtually ab-
sent. Our own corpus, consisting of almost 3000 14th-century charters, covers the
entire Dutch speaking area, see van Reenen (2000).

Our approach can be described as follows: we start by distinguishing the small-
est potentially relevant categories. Only when no significant differences in geo-
ographical distribution are found between the categories we lump them together.
For instance, since we have not found any significant difference in geographical
distribution between the spellings *ie*, *ei* and *ey* of the vowels in open and closed
syllable of words like *gemeen* and *gemene*, we collect data from both categories
indiscriminately. In addition, although there is a significant difference in the use of
*e* and *ee* in *gemeen* (almost 100% *ee*) and *gemene* (30% *ee* vs. 70% *e*), this dif-
ference is not geographical. So here too we have put all occurrences of these forms
together.

Our results are collections of spellings, which can be presented in tables or
plotted as maps. These spellings can be interpreted along two lines:

a. It might be claimed that spellings bear no relation to their actual phonetic
values. In this view spelling conventions are the result of phonetically arbitrary
decisions made in scribal centers such as monasteries and chanceries. They
may contain etymological elements, reflect older phases of the language, be
influenced by other languages, or simply arbitrarily chosen.

b. It might also be claimed that they represent phonetic values insofar as the
alphabet is capable of doing this.

Both claims make sense, we believe, i.e. both views can be substantiated to some
extent. In the following we will attempt to show that in the case of the reflexes of
Proto-Germanic *ai* it makes sense to interpret the spellings *ie*, *e(e)*, *ei* and *ey*
in terms of phonetic values.

We reason as follows: when spellings plotted onto maps geographically form
potential dialect patterns, we consider the letters as some kind of restricted IPA.
Contemporary witnesses can confirm and/or refine our interpretations, while the
reflexes of the forms found in modern dialects may do the same. Medieval rhymes
may also be helpful. When potential dialect patterns are lacking and/or no credible
interpretation of the spelling offers itself, other factors may play a part. Among such
factors are non phonetic conventions of scribal centres, in order to disambiguate forms by means of letters based on etymology (such as the $p$ in French *temps*) or remnants of a phonetic difference which has disappeared, such as *ij* and *ei* in Modern Dutch. A special possibility we have come across is that the spellings do not exhibit the dialect pattern of the area the texts were written, but from the area where the scribes and their predecessors originally came from. This is the case of Anglo-Norman in England, in which no dialectal patterns can be discerned. However, when analyzed in terms of continental French, Anglo-Norman happens to relate most closely to the French of Normandy, especially to the area of Falaise, the hometown of William the Conquerer, and to the French of the Angers region, where Henry II Plantagenet had his roots, see de Jong (1988).

2. Results

Some results of our spelling analysis are illustrated in Maps 1 through 6. They concern *gemeen*, *meester* and *eigen*, all frequent forms in our corpus. When we compare these maps and those, not yet published, with the other words, frequent or infrequent, examined, we can draw several conclusions:

2.1 Distribution of the spelling *ie*

The spelling *ie* is found most consistently in Holland in almost all *ee*-words. In descending order of frequency: *gemien* > *hiet*, *stien* > *ien*, *miester*, *giest*, *diel* and from the *ey*-series *clien*. Pockets of *ie* spellings are found elsewhere: *giest* (the dominating form in Deventer), *hieten* (Deventer and Zwolle), *stien* (Zutphen), isolated forms elsewhere.

2.2 Distribution of the spelling *e(e)*

The spelling *e(e)* is found everywhere except in the Twente area and in most of the two Limburgs in *een*, *geest*, *steen*, *deel* and more to the west in *gemeen* (marginally in Brabant and Antwerp, see Map 2), *heten*, *kleen*, *vlees*, *teken*, *eek*, *meester* (marginally in the Achterhoek; *mester* is dominant in Groningen, perhaps a conservative spelling as in *bref* “letter”). Mainly in Groningen and Flanders we find: *egen* (West Flanders only), *helig*, *hede*, *bede* (marginally in Groningen), *wede*. 
Map 1. The spelling *ie* (*ye*) versus other spellings in the stem *meen, mene* of words such as *(ge)meen(te), (ge)meen(lijk)*. Dark areas have *ie* (*ye*). The small map shows the frequency distribution of the word: the darker the areas are well documented. Production: Evert Wattel, see Wattel & van Reenen (1994).

### 2.3 Distribution of the spelling *ei*

The spelling *ei* is relatively rare. Striking patterns show *gemein* (see Map 3) which dominates in the Brabant/Antwerp area, *meister* (see Map 6) which dominates in the Achterhoek, *klein* which is relatively frequent in North-Holland, *heide* which is concentrated mainly in Antwerp and North-Brabant and *deil* which occurs in a central area. More diffusely, we find *eigen* (forms in West Flanders, north of Brussels and in North-Brabant; *heiten* (mainly Belgian Limburg); *heilig* (mainly from central North-Brabant to Brussels, central south in Belgian Limburg, and the area of Haarlem); *beide* and *vleis*. *Ei* is almost lacking in *een*. 
Map 2. The spelling e(e) versus other spellings in the stem meen, mene of words such as (ge)meen(te), (ge)meen(lijk). Dark areas have e(e). Production: Evert Wattel, see Wattel & van Reenen (1994).

2.4 Distribution of the spelling ey

All forms have ey in the Twente and Limburg (with the exception of the western part of Belgian Limburg), even geyst, eyn, steyn, but heilig, especially in the Twente, is hillig, a Westphalian form. (Deel and meester are not attested in the Twente.) More to the west (the rest of Belgian Limburg, North-Brabant, most of Gelderland) we find gemeyn, heyten, kleyyn. Meyster dominates the Zwolle and Kampen areas, Utrecht (province), and even Amsterdam. The not frequent form teken has ey in the central area and even in South-Holland. Everywhere, except in Flanders and Groningen, we find eygen, heylig, beyde, and the sparsely documented forms heyde, weyde, cyk.
On the reflexes of Proto-Germanic ai

2.5 Conclusions

The preceding observations can be summarized as follows:

1. We observe four areas without difference between the two series of words
   a. In (West) Flanders and Groningen (the south west and the north east) all words tend to have the same spelling e(e).
   b. In the Twente and most of the Limburgs (the east) all words tend to have the same spelling ey.

2. Clear examples of the reflexes of the ee-series and of the ey-series occur in our data. To the ee-series belong without any doubt geest, steen, deel, een, to the ey-series eigen, beide, heilig (except the Twente, see above), weide. However, half of the words examined: heten, gemeen, meester, vlees, teken, klein, heide, eik exhibit patterns which cannot be assigned without further qualification to either series.
Map 4. The spelling ey (eij) versus other spellings in the stem meen, mene of words such as (ge)meen(te), (ge)meen(lijk). Dark areas have ey (eij). Production: Evert Wattel, see Wattel & van Reenen (1994).

3. Interpretation

In 3.1 we review some sources of independent evidence, which serve to confirm our interpretation of spellings in terms of phonetic values, discussed in 3.2. The role of the umlaut factor will briefly be discussed in 3.3.

3.1 Sources of independent evidence

The more independent evidence we have to confirm the interpretation of medieval spellings in terms of phonetic values, the more convincing that interpretation will be. An important piece of independent evidence is preserved by Modern Dutch dialectology. For instance, in the south, west and the north-east of the Dutch speaking area we find no distinction in pronunciation between the words with and the words without umlaut factor (see 2.5 above). This is confirmed by the data in Goossens et al. (2000:274–283): In the modern dialects of Groningen all words
of the ee- and the ey-series have become [aj]. Even the smaller area with e(e) in 
eigen as opposed to words such as klein in Flanders today (see Goossens et al. 
2000:274) can be traced back in our data in slightly different form: The charters 
exhibit fewer occurrences of eigen written with e(e) in Flanders than in other ei-
words in this area. Likewise, ey, which we interpret [ej] (see below), is the common 
form in most of Limburg in both data sets. However, in the Twente ey in all words 
has usually been replaced by [e:] under Hollandish influence, only the conservative 
dialect of Vriezeveen often still has the [ej], see Goossens et al. (2000:273–301).

We can also compare our results with those of German, see Löffler (1978), 
confirming our interpretation of ey as [ej] and with those obtained in the south-
ern part of the Dutch speaking area by Berteloot (1984) and Mooijaart (1992). We 
see, for instance, that the use of ie (= [i:], and i/y (= [i] or [i:]) has diminished in 
our data, and occurs only accidentally: wyde, wide (2x) in the Limburgs; hide in 
Zeeuws-Vlaanderen, diel in Haarlem (2x) and Erps-Kwerps (Brabant); ghemyn- 
in Groningen (2x), Zutphen (3x), Maastricht and Hamont. That g(h)iest is the dom-
Map 6. The spelling *ei* versus other spellings in *meester* and derivations (for instance *kerkmeester, arnhuismeester, burgemeester*). Dark areas have *ei*. Production: Evert Wattel, see Wattel & van Reenen (1994).

The spelling *ei* versus other spellings in *meester* and derivations (for instance *kerkmeester, arnhuismeester, burgemeester*). Dark areas have *ei*. Production: Evert Wattel, see Wattel & van Reenen (1994).

Another piece of evidence is provided by a witness of Erasmus. The word *vlees*, with only 29 tokens in our corpus, is remarkably often written with *ey*, to be interpreted as [ɛj], where we do not expect this: Den Haag, Utrecht, North-Brabant (Breda, Eindhoven, Den Bosch), Groningen (city) and once *eey*: in Zwolle, regions in which we expect *ee* in our 14th-century data. However, in 1535 Erasmus also mentions the [ɛj] pronunciation in *vlees* for western Dutch, see below. And although we have no 14th-century data for Zeeland, in 1735 *vleijs* is mentioned in Walcheren and/or Aksel, see Stroop (1997:198). The special behaviour of this word also appears from the map in Goossens et al. (2000:278–279), which has [ɛj] in Zwolle for instance. We have already observed that both *vl[ɛj]s* and *vl[e]s* occur in Afrikaans. Other words we can compare with modern data are *heten*...
and steen. Heten is still pronounced with close vowel or diphthong (see 3.2 below) in North-Holland in the 17th century: Roemer Visscher (from Amsterdam) has the rhymes niet: hiet, see Moser (2001:118, 266). With respect to steen, see Goossens et al. (2000:282–283) and Weijnen (1991, Map 15). Not only in Holland, but also in the area of the Yssel (although not in Zutphen, see above) we find forms with [ie]. A comparison of eik and klein to Goossens et al. (2000:293–297), Weijnen (1991:Map 16), Daan & Franken (1972–1977) also confirms the reliability of our medieval data. Basically the same patterns can be distinguished. All this suggests that the medieval spellings are serious efforts of the scribes to approximate phonetic values.

3.2 Phonetic values

We interpret the spelling ie as [iɪ] or [iə]. We consider Erasmus an important witness, although living some 150 years later. Erasmus (1528:58) writes: “... quum Batauus sonat arundinem (riedt), aut Margaritam pro foemina; audis ... i ante e.” When a Hollander pronounces riet “reed” or Margriete “Margareth”, you hear /i/ preceding /e/, i.e. [i] followed by a palatal second element, see also Caron (1972:106), who convincingly demonstrated the reliability of Erasmus’ phonetic observations. In the 14th century ie represents a different phonetic value from i and ij, which are [iː], later [ei], see Goossens (1980).

We interpret e(e) as [Ie], [Iə], [e] or [e]. This phonetic interpretation of e(e) in a word such as geest has to be distinguished from e and ee in geven and geef, see Goossens (1980:13). It is supported by a difference in spelling. The use of e and ee in gemeen (almost 100% ee) and geme(e)ne (30% ee vs 70 % e), versus geef (almost 100% ee) and geven (almost 100% e), suggests that scribes looked for ways to distinguish the sounds.

We interpret ei as [ei]. This interpretation is new since ei was never separated from ey. Our interpretation is mainly based upon the consideration that concentrations of ei spellings are found in between ee and ey both in the south west and in the north east, see Maps 3 and 6. We do not believe this i indicating length, since it occurs both in open and closed syllables.

We interpret ey as [sj]. Van Leuvensteijn (1998:173) interprets ei/ey as [aj] in Brabant and Holland, the old Proto-Germanic form. We agree that [aj] may be found again from 1550 on, perhaps only in vulgar speech, but not much earlier. Ay spellings do occur in our corpus in words such as sayen, wayer, coppedrayer, payment, Craynem, Raenswaye, Wayboom, Fraybaert. They are pronounced with [aj] in Modern Dutch. Ay also occurs very exceptionally in mei as may(e) (4x), mayo (1x), a spelling influenced by Latin, we think, as opposed to mey(e) in a total of about 200 instances. We do find one other ai in our corpus, in Hoorn (North-
Pieter van Reenen and Anke Jongkind

Holland) where, besides the placename Roedestien “Red Stone” the proper name Stain “Stone” is found once. We also have three cases of a in ghehaten (past participle) in Zeeland. This may be a case of local, ingvaeonic morphology: heet (in Zeeland) versus gehaten. Even more importantly, Erasmus (1528:58) provides the following witness: “Iam αι diphthongum euidenter audire licet in Germanorum, quum nominant Caesarem … Neque non sentitur apud nos diphthongus ει, si Hollandice dicas ouum, paratus, versutiae, Maius, facinus, seductus, caro.” In other words, αι = [ai] in German Kaiser, ει = [εi] in Dutch ei, bereid, loosheid, mei, feit, gescheiden (or verleid), vleis. Interestingly, Erasmus mentions two words in our corpus: Mei and vleis. In the ears of Erasmus, the form vleis is perfect western Dutch, see above.

The pronunciations we have proposed still exist. In standard Dutch [eː] and, newly, [εj] dominate, also in GEVEN. In Afrikaans we find generalization of [εi], [εi], [ɛ], [ɛ] over all forms with e(e).

3.3 Umlaut

Traditionally, reflexes of Proto-Germanic ai are split up into two groups of words: those with umlaut factor and those without. However, when we consider the results of our investigation, we have to conclude that, even in the 14th century, this binary opposition does not hold any longer. Even if we leave out of consideration exceptions such as hillig for heilig in the Twente, we have to distinguish at least three groups of words:

1. Those in which almost everywhere the umlaut factor is present: EIGEN, BEIDE, WEIDE, HEILIG.
2. Those in which hardly ever the umlaut factor is present: GEEST, STEEN, DEEL, EEN.
3. Those in between these extremes: HETEN, GEMEEN, MEESTER, VLEES, TEKEN, KLEIN, HEIDE, EIK.

Do we have to distinguish at least three degrees of umlaut, the influence of which diminishes from east to west?

4. Conclusion

In this study we have attempted to demonstrate that in our corpus of 14th-century Middle Dutch charters

– spellings of reflexes of Proto-Germanic ai can be interpreted in a credible way in terms of phonetic values
On the reflexes of Proto-Germanic ai

- the phonetic realizations of spellings cy and ei have to be distinguished
- an analysis in terms of presence or absence of an umlaut factor does not account for the geographical distribution of forms in the dialects
- the influence of stronger or weaker umlaut factors diminishes from east to west.

Notes
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