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GRAMMATICALIZATION AS A 'UNIDIRECTIONAL'
PROCESS OF CHANGE:
EVIDENCE FROM SOME URALIC LANGUAGES

1. INTRODUCTION

Grammaticalisation is the phenomenon by which (using Meillet (1912: 131) words), "le passage d'un mot autonome au rôle d'élément grammatical" is accomplished. In practice, from major lexical categories, such as nouns, verbs and adjectives, minor grammatical categories are created, such as prepositions and postpositions, adverbs and auxiliaries, which in turn may be further grammaticalised to become affixes. Grammaticalisation is a common phenomenon in languages and it is accomplished through (apparently) regular, sequential, irreversible stages of development (Vincent 1980; Traugott & Heine (eds) 1991; Lass 1997):

1. progressive reduction / simplification of the phonetic shape of the original noun;
2. loss of its specific semantic content;
3. cliticisation and (eventually) agglutination.

This means that full words, with their own lexical content, may become grammatical, connective words, which simply mark a particular construction, whereby the change of category status tends to be accompanied by a reduction in phonological form and a 'bleaching' of meaning. Thus, grammaticalisation is usually a global process of change that affects the phonology, morphology, semantics, and ultimately, the syntax of the elements involved in

the change. Furthermore, the whole process suggests the existence of genuine, directional pathways in morpho-syntactic changes.

One of the most frequent processes of grammaticalisation is the one by which original, full nouns are transformed into postpositions, and eventually, through the final stage (3), into suffixed Case endings, along the pathway shown in (4) below (Givón 1971):

4. Noun > Postposition > Clitic > Case ending

As mentioned, each step along this path seems to be irreversible, in the sense that, once a noun has become a postposition, it can't become a noun again (although the noun and the postposition formed from it can co-exist in the language), and a Case ending cannot detach itself to become a postposition, or a full noun. And, in fact, thus far there do not seem to be exceptions to the uni-directionality of this process.

The Uralic (U) languages provide further evidence in support of the thesis of the uni-directional nature of grammaticalisation. In fact, several (mainly eastern) U languages have developed postpositions and /or Case endings from ordinary, full nouns through the process of grammaticalisation, whereby the various phases of development as reported in (1)-(4) above are all well represented, and always and only according to the expected order. On the other hand, those languages (mainly the western languages) which present instances of 'reversals' and therefore might appear at first to contradict the 'uni-directionality' thesis, in reality form their Case endings not through the process of grammaticalisation, but through a different process, called co-optation / exaptation. In what follows, we shall illustrate this state of affair by reporting several, crucial examples of grammaticalisation of nouns into postpositions / Case endings drawn from several U languages, as well as an example of co-optation / exaptation drawn from the Finnic languages.

2. EXAMPLES OF GRAMMATICALISATION IN SOME URALIC LANGUAGES

2.1. GRAMMATICALISATION IN KHANTY

In Khanty, the process of grammaticalisation of nouns into postpositions is still clearly between the first and second stage along the path of development as represented in (1)-(3) and (4). In fact, in this language (as well as in Samoyed and Mari) postpositions are nouns with defective paradigms and distributions, and it is often difficult to draw a clear boundary between the class of nouns and that of postpositions, since many nouns can enter into ad hoc postpositional constructions, such as *kiim* 'extent'. As Abondolo (1998c: 367) says, "postpositions are nouns with defective paradigms and distributions. Some have only one form, with fossilised, synchronically opaque Morphology, e.g. the intrinsically Lative *moč̣ð* '(to)as far as',. ..Most, however, occur with at least one, and usually two or more synchronically segmentable local suffixes attached, e.g. Lative *p̄ir-aa* 'to behind' : Locative *p̄ir-n̄ð* 'behind, after'..". Compare the following examples (example (5) is from Abondolo (1998: 367), whose transcription is reproduced); examples (6) and (7) are from Gulya (1966: 92)):

5) *tuut-eem* *kiim-n̄ð*
 mouth-my extent-Loc.
 'up to my mouth'.

6) *l̄σ, ̣γ* *kat* *kas-n̄ə* *lal'wəl, ^*
 he house space=behind-Loc. stands
 he stands behind the house

7) *l̄σ, ̣γ* *m̄σγ* *l-ð* *l-ä* *ät'ĩ-l* *j̄σ, ̣s*
 he side-his-Lat. elder=brother-his came
 instead of him his elder brother came

As shown in these examples, the noun used in a postpositional function, just like any ordinary noun, can occur without any ending

or can be inflected. In the latter case it may be inflected with a Case ending, normally a 'primary'¹, simple local Case ending, as in (5) and (6), or with a Possessive and a Case ending, as in (7). Compare also the following example from the Muzhi dialect, where the postposition *ēlti*, *ēlta* 'out, of, from, off' codify an ablative function (see Rédei 1965: 37, 75):

- 8) *kūr* *ēlti*
 village from 'from the village'

2.2 GRAMMATICALISATION IN HUNGARIAN

The Case system of Modern Hungarian, which is fully formed (although a few Case endings are still in the process of being created at present), has mostly derived from the grammaticalisation process described in (4). The process of transition from noun / postposition into Case endings has taken place in recent historical times, and it is clearly documented in the oldest Hungarian texts. The examples given below, derived from the famous text *Halotti Beszéd* 'Funeral Oration' (the first Hungarian text, dated between 1192 and 1195), speak for themselves. They show how the secondary, 'complex'² Case endings present in modern Hungarian derive from an original (spatial-type of) noun, which can be inflected with a simple, primary Case ending and (possibly) a Possessive ending (examples from the edition by Molnár & Simon (1977:27); see also Imre (1972:333-334)):

¹ In the U languages there are two types of Case endings: a) simple, 'primary' Case endings and b) complex, 'secondary' Case endings (for which see note (2) below). The primary endings, which consist indeed of simple formants (usually the most basic sounds), are held to be the modern reflexes of the original, Proto-Uralic Case endings.

² The secondary, complex Case endings are endings which consist of the combination of two elements, one of which at least is a simple, primary Case ending. These complex endings, which are formed either through grammaticalisation or through co-optation, cannot be traced back to the old, Proto-Uralic Case endings. They are in fact new (and often quite recent) creations, formed during the historical development of the individual U languages.

Old Hungarian	Modern Hungarian
9) <i>gimilc-be-n</i>	> <i>gyümölcs-ben</i> 'inside, in the fruit'
10) <i>vilag-bel-e</i>	> <i>világ-ba</i> '[movement] into [inside] the world'
11) <i>timnuce-bel-ev-l</i>	> <i>tömlök-ből</i> '[movement] out of [the inside of] prison'
12) <i>gimilcíc-tu-l</i> (~ <i>-tv-l</i>)	> <i>gyümölcs-től</i> '[movement] from the [surface of] fruit'

In examples (10) and (11) the ordinary noun *bél* 'entrails, interior' (which still exist as an independent noun in Modern Hungarian) has a postpositional function and preserves its sound shape, whilst in (9) the same noun / postposition, having lost its original sound shape through phonological reduction, has been grammaticalised and transformed into a Case ending. As a postposition, and then as a Case ending, *bél* is regularly constructed with simple, primary endings: Locative *-n* (< **-n*, with a superessive function) in (9); Lative *-e* in (10), and Ablative *-l* (**-l*) in (11). These constructions clearly shows the transition from noun / postposition into Case ending. In fact, in (9) we have already the Case ending in its current form (as shown by the comparison with Modern Hungarian). This is not yet the case in (10) and (11), where *bél* has not yet undergone any reduction or change in its phonetic shape. In other words, we find attested in this old text the intermediate stage in the formation of the modern Case ending *-ba* ~ *-be* < *-bel-e* (in (10)) and the intermediate stage in the formation of the modern Case ending *-ból* ~ *-ből* < *-bel-ev-l* (in (11)), whilst the intermediate stage in the development of the modern Case ending *-ban* ~ *-ben* is missing. It is also interesting to observe that the postposition in *vilag-bele* in (10) does not obey the rules of vowel harmony. This in turn means that this element has not yet completely lost its autonomy, although the way it is written - attached to the preceding noun - seems to suggest that the process of cliticisation has somehow started.

In (12) the form *-tu-l*, that is, the original noun / postposition + the Ablative *-l* (> Modern Hun. *-tól* ~ *-től*) is again fully a Case

ending, in the same way as *-ben* in *gimilsz-be-n* of example (9). The original noun / postposition is no longer in use in the current language, but it has been reconstructed as F-U **tiŋe* (**tūŋe*) 'root, base (of the tree), stem'. From this stem also Finn. *tyvi* and Hun. *tő* (Acc. *tőve-t*), as well as other postpositions / Case endings in Komi / Zyrian and Mordvin,³ are derived (see UEW 523 and Baker 1985).

2.3 GRAMMATICALISATION IN THE WESTERN LANGUAGES

The western U languages have developed their complex Case endings mostly through the process of co-optation (see the following paragraph). However, there are a few instances of formation of Case endings through grammaticalisation also in some western languages and dialects, such as Estonian and Ingrian. Once again, the process of grammaticalisation takes place, regularly, along the semantic, phonological and morphosyntactic pathways outlined in (1)-(3) and (4) above. Often, the two functions – postpositions and Case endings – may coexist within the same stage of language, as one would expect it to happen along the path of transition.

In Estonian, for example, we witness the gradual development of the postposition⁴ *kas* ~ *kaas* ~ *kaass* etc. 'with' (equivalent to Finn. *kanssa*) and the Comitative Case ending *-ka* ~ *-ga* 'with' derived from it. This process is well documented in texts since the 16th / 17th Centuries (regarding the semantic development of *-ga* see Oinas (1961)). Compare the examples (13) and (14), from Kokko (2000/2001:111), who refers to the speakers of Savakko in Estonia, and examples (15) and (16), from Laitinen-Lehtinen (1997:

³ For example, the noun /postposition derived from this stem is *-din* in Komi. In this language too, according to Baker (1985: 170), 'there is no ready-made criterion by which an element can be judged definitively a Case suffix or a postposition'.

⁴ More in detail, according to Oinas (1961), in the earliest period of the Estonian literature (16th / 17th Centuries) appeared the postpositions *kas*, *kaes*, *kaas*, *kaass*, *kahs*, etc. (which governed the Genitive case), as well as the equivalent forms in *-n*, such as *kaen*, *koen*, *kahn*, *gan* (the *-n* forms were, for the most part, confined to the 17th Century, with only a few examples dating from the previous and the following centuries).

7-8) – in (13) and (14) the boundary between postposition and Case ending is rather loose:

- 13) *Tämän kans puhelimme*
 this with we=talked 'we talked with this'
- 14) *minä käisin tämän kaa puhelemaa.*
 I started this with to=speak
 'I started to speak with this'
- 15) *auto-ga*
 car-with 'with the car'
- 16) *vana isa-ga*
 old father-with 'with the old father'

Similarly, in Ingrian the *-ka* elements are used both as Case endings and as postpositions (although the latter use is less frequent), the boundary between the two functions being, again, rather loose. In fact *-ka* may display Case ending type of features, such as adaptation to vowel harmony (as shown in (18a) and (18b) below), as well as postposition type of features, such as lack of casual congruence (see: *suuren työn-kä* in (20) and not **suuren-ka työn-kä*). Compare the following, western-Ingrian examples (examples (17) and (20) are from Kokko (2000/2001: 111-112); examples (18a & b) and (19) are from Oinas (1961: 49)):

- 17) *Sittem minä [menin]Akselin-kà naimisi*
 then I [went] Akseli-with marriage=into
 'then I got married to Akseli'
- 18a) *Häneŋ-kä* / 18b) *Hatuŋ-kä*
 him-with hat-with
 'with him' 'with the hat'
- 19) *Kuninkaan tüttären kans*
 king daughterwith 'with the king's daughter'
- 20) *suure-n työn-kä*
 great-Gen. work-with 'with great work'

A Comitative Case ending *-kaa* (equivalent to Est. *-ka ~ -ga* and Ing. *-ka*), can be found also in some Finnish dialects. This ending, once again, usually lacks the features typical of the Case endings (as shown in (21a & b below)), that is:

- a) it is not adapted to vowel harmony
- b) it is not added to the stem of its head-noun, as it is instead the case, for example, in Finn. *vanha-lla pöydä-llä* 'old-on table-on, on the old table'
- c) the head-noun it co-occurs with is inflected in the Genitive case, this being a feature typical of postpositions

21a) <i>Marja-n-kaa</i>	/	21b) <i>Yrjö-n-kaa.</i>
Marja-Gen.-with		Yrjö-Gen.-with
'with Maria'		'with Yrjö'

Notice, however, that adaptation to vowel harmony can be found in some very restricted dialectal areas in the Kymenlaakso region (Tytärsaari); compare for example: *kärrin-kää* 'cart-with, with the cart' (see Laitinen & Lehtinen 1997:7; see also Oinas 1961:48). This variation confirms that the element in question is indeed in a face of transition, and, therefore, of instability.

Similarly, Possessive suffixes as well as various other kinds of particles precede the element *-kaa* (Lehtinen 1997: 8). This sequence order, again, points to the fact that the *-kaa* element has not yet reached the status of Case ending, since in Finnish Possessive endings always follow Case endings, as shown in the following examples: *talo-ssa-ni* 'house-in-my, in my house', *talo-ssa-kin* 'house-in-too, in the house too', *ystävä-lle-ni* 'friend-to-my, to my friend', *ystävä-lle-kin* 'friend-to-too, to the friend too', etc. Compare the examples (22a & b) below:

22a) <i>isä-ns-kaa</i>	/	22b) <i>isä-n-ki-kaa</i>
father-his-with		father-Gen-too-with
'with his father'		'with the father too'

The following diagram by Laitinen & Lehtinen (1997: 8) shows the development of the cliticised form *-kaa* from the postposition

kanssa 'with', which, in turn, is believed to derive from *kansa-ssa*, that is, the original, independent noun *kansa* 'people'⁵ inflected in the Inessive Case:

23) *Kansa-ssa* (noun) > *kanssa* (postposition) > *-kaa* (clitic element)

At this point it is appropriate to quote Finnish forms such as *pää-llä* literally 'on the [surface of the] head', *pää-ltä* 'from the [surface of the] head', *pää-lle* 'onto the [surface of the] head', etc., which are regularly inflected forms of the ordinary noun *pää* 'head'. In addition, these forms can be in turn utilised as postpositional constructions, equivalent to the postpositional constructions of Hungarian and Khanty discussed above (the head noun being in the Genitive Case). The postpositions with the stem *pää-* appear in all the Balto-Finnic languages. Compare the following examples:

24a) *Kissa istuu pöydä-n pää-llä*
 cat sits table-Gen. head-on [surface of]
 'the cat sits on [the surface of] the table'

24b) *Kissa menee pöydä-n pää-lle*
 cat goes table-Gen. head-onto [the surface of]
 'the cat goes onto [the surface of] the table'

24c) *Kissa tulee alas pöydä-n pää-ltä*
 cat comes down table-Gen. head-from [the surface of]
 the cat comes down from [the surface of] the table

Other body parts terms which, like *pää*, can be used in a grammaticalised / postpositional function whilst still being used as ordinary nouns are the following: *käsi* 'hand', *rinta* 'chest', *kylki* 'side, flank', etc. (see Ojutkangas 2001).

⁵The word *kansa* is believed to have been borrowed from Proto-Germanic, where its meaning was '(crowd of) people'. The word is historically of the same origin as *Hansa*, the name of the medieval trade union town in Northern Germany. The meaning of '(crowd of) people' has been inherited also in Finnish.

The Estonian equivalent of the Finnish postpositions in *pää-* (as reported in (24a)-(24c)) are the postpositions derived from the noun *pea* 'head, top part of body'. Compare at this regard the local series: *pea-l* 'on', *pea-le* 'onto', *pea-lte* 'from'. Among the other postpositions (with related functions) that derive from the noun *pea* one could also quote *pea-st*, which expresses quality of state of being, whereby both the postposition *pea-st* and its head-noun are in the Elative form (except in the case of the participial form in *-nud* / *-tud*, where the head-noun is in the Nominative). The whole construction can be replaced by the Essive Case, although the two constructions may convey different semantic nuances. In other words, the Case ending and the equivalent postpositional construction are not freely interchangeable, even though both are possible from a pure grammatical point of view (see Mikone 2000: 26, 27).

25a) <i>punase-st</i> <i>pea-st</i> /	25b) <i>punase-na</i>
red-Ela. head-Ela.	red-Ess.
'as red, in a red status'	'as red, in a red status'
26a) <i>väsi-nud</i> <i>pea-st</i> /	26b) <i>väsinu-na</i>
tired-Part. head-Ela.	tired-Ess.
'as tired, in a tired status'	'as tired, in a tired status'

To conclude this line of thoughts one may observe that in Hungarian too there are a few, ordinary nouns that can also function as postpositions. We have already seen above the noun *bél* 'entrails, interior', which was used as a postposition and /or Case ending in Old Hungarian, but which has definitively turned into a Case ending in Modern Hungarian. One can now quote the lexical item *mell* 'chest, breast', which can also be used as a postposition in the current language, and which displays an interesting, coherent behaviour. If the item *mell* is used as a noun, and if it co-occurs with a Possessive and Case ending, the reciprocal order of these endings is "Possessive – Case", the normal order required in Hungarian in connection with nouns: *melle-m-ben* 'chest-my-Loc., in my chest'; compare for example *barát-om-nak* 'friend-my-Dat.,

to my friend'. If instead *mell* is used in a postpositional function then the opposite order takes place, as normally required in connection with postpositions: *melle-tt-em*⁶ 'chest-Loc.-my, beside me'; compare for example *köz-t-ük* (~ *közö-tt-ük*) 'interstice-Loc.-3rdPlu., between, among them'.

3. THE PROCESS OF CO-OPTATION / EXAPTATION

As mentioned in the Introduction, there do not seem to be exceptions to the unidirectional nature of the process of grammaticalisation, and, in particular, to the process of formation of Case endings from nouns / postpositions. More generally, the following state of affairs, as expressed by Lass (1997:258), does not appear to have been contradicted so far:

- 27a) In a given morphological environment, assuming that the phonological substance is not innovatively added to, information tends to be lost, not gained overtime
- 27b) therefore grammaticalization (in the sense of growing opacity of segments or morphs with respect to their original morpho-syntactic significance) is likely to be irreversible: all merger, no split

And, in fact, the few instances of reversals to the direction of semantic and morpho-syntactic development illustrated in (27a & b) which have been reported in the literature seem to be only apparent exceptions, due "to the addition of new (morphological or downgraded lexical) material, i.e. reanalysis", to use again Lass' (ibid.) words. In other words, these apparent 'reversals' are in reality the result of the process of 'co-optation' (also called

⁶ The other interesting phenomenon connected with the double function of this noun is the fact that different Locative endings are used in connection with one or the other function. In the nominal function the Case ending used is that secondary, complex Locative ending *-ban* ~ *-ben*, whose formation was illustrated in examples (9)-(11), whilst in the postpositional function the Case ending used is the 'primary', simple Locative *-t*, direct reflex of the (supposedly) original, P-U *-t.

'exaptation'⁷), that is the process of re-utilisation of pre-existent, non-Case material or the process of re-organisation of the original Case endings themselves in order to build new Case endings / systems. In other words, new, complex (and often coherent) sub-systems are formed through the following two stages of development:

- a) the splitting of the original, more general meaning of some of the original Cases,
- b) the combination of these old Case endings (and /or derivational and other kinds of grammatical material)

These new Case endings /systems usually are of a type which is not attributable to the Proto-language and are usually driven by quite new organisational principles.

The U languages, once again, provide a clear testimony that this is indeed the case. In fact, all the complex, secondary Case endings existing in the U area and which are not the result of grammaticalisation, appear to have been formed through the process of co-optation / exaptation, this process being still (relatively) transparent in most instances. As mentioned, this way of creating new Case endings is typical of the Western languages, including Finnish, where the type of endings re-utilised in the co-optation are mainly, but not exclusively, the primary local endings (for more details see Korhonen 1979 /1996, 1981/1996).

The following Table (taken from Marcantonio 2002: 210) shows how some new, secondary Case endings have been created in Finnish through co-optation of some pre-existing, (presumed Proto-Uralic) Case endings:

⁷ The process of co-optation is also called exaptation, from Gould & Vrba (1982), who first used this name within the field of biology and palaeontology. For more information see also Orr (1999).

**Table 1. Formation of new, 'co-optated' Case endings in Finnish
(from Marcantonio 2002: 210)**

a. Old 'primary' / simple Case endings		
Nominative	<i>kala-Ø</i>	'fish'
Essive	<i>kala-na</i>	'as a fish'
Partitive / (Ablative)	<i>kala-(t)a</i>	'some fish'
b. New 'secondary' / complex Case endings		
b.1 Interior local Cases		
Inessive	<i>kala-ssa</i> 'in [inside] the fish'	-ssa < *-s-na
Elative	<i>kala-sta</i> 'out of [the inside of] the fish'	-sta < *-s-ta
b.2 Exterior local Cases		
Adessive	<i>kala-lla</i> 'at / on the [surface of the]fish'	-lla < *-l-na
Ablative	<i>kala-lta</i> 'from [the surface of the]fish'	-lta < *-l-ta

Here, the constituent elements **-na* (Locative), **-ta* (Separative / Ablative), **-s* (Lative) and **-l* (Ablative) are all simple, primary Case endings, some of which still in use in the language in their original function, as shown in point (a.) in the Table. In addition to this, these simple endings have also been re-utilised, that is combined together with other endings and re-arranged in various (language-specific) ways, so as to create totally new Case endings, as shown in point (b.) in the Table.

To conclude, we hope to have shown that the data relating to the creation of the secondary, complex Case endings in the U languages (were they created through co-optation or through grammaticalisation) provide further evidence in favour of the widely claimed 'uni-directional' nature of the process of grammaticalisation.

ABBREVIATIONS

Dat.	Dative
Ela.	Elative
Ess.	Essive

Est.	Estonian
Finn.	Finnish
Gen.	Genitive
Hun.	Hungarian
Ing.	Ingrian
Lat.	Lative
Loc.	Locative
Part.	Partitive
Plu.	Plural
P-U	Proto-Uralic
U	Uralic

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