GRAMMATICALIZATION OF COMPLEX ITEMS:  
ESTONIAN NII ET ‘SO THAT’, ‘SO’

Anni Jüringe and Külli Habicht  
University of Tartu

Abstract. The article discusses the development of complex items that may carry grammatical as well as pragmatic functions. We describe the development of the Estonian complex conjunction nii et ‘so that’ which started out as the free combination of the pro-adverb nii ‘so’ and the conjunction et ‘that’, and has currently reached the stage of pragmatic marker located at the sentence-peripheral position and expressing conclusion. The synchronic corpus study analyzes 862 examples and observes the functional and the formal variation of nii et ‘so that’, ‘so’ as well as the association between them. The data suggests that nii et has four formal variants (nii, et; nii et; niet; niet) and its functions have developed in the following chain: MANNER > CONSEQUENCE > CONCLUSION. The data suggest an association between the functional and formal variation. The development of nii et displays the main mechanisms of grammaticalization (desemanticization, decategorialization, extension, erosion) and is associated with re-cycling of grammar, and pragmatic roles of sentence peripheries.

Keywords: complex grammatical item, pragmatic particle, grammaticalization, pragmatalization, recycling of grammar, sentence peripheries, insubordination, Estonian

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1. Introduction

In the recent decades, the relationship of grammaticalization and pragmatalization has been in the focus of a number of studies (Barth, Couper-Kuhlen 2002, Traugott, Dasher 2002, Brinton 2010, Diewald 2011, Heine 2013, Degand, Evers-Vermeul 2015). However, less attention has been paid to these phenomena in the development of complex grammatical items, e.g. complex items that serve as grammatical and/or pragmatic devices. The main goal of the present paper is to gain insight into the development of complex conjunctions that may also be used as pragmatic particles (see also Keevallik 2000, Remmelg 2006) while approaching it as a complex process of grammaticalization. Moreover,
the paper will focus on formal changes that accompany the functional changes throughout the development of the complex grammatical item.

The paper investigates the rise of the complex item nii et ‘so that’, ‘so’ in Estonian. Nii et is a prime example of the development of (complex) discourse particles in Estonian with all the stages of the process still observable in contemporary language. The development of nii et starts out from the pro-adverb nii ‘so’, which serves as the correlate of the following subordinate clause starting with the conjunction et ‘that’. In the following stages, nii et ‘so that’ acquires a holistic interpretation and becomes a complex conjunction. This process also relates to insubordination (see Evans 2007), which is accompanied by the development of pragmatic function. While “Grammar of Estonian” (Erelt et al. 1993: 110–112) lists a number of so-called complex conjunctions, it makes no reference to their pragmatic function. Even though other similar changes in function are observable in Estonian (e.g. ol-gu-gi et (be:JUS-CL + that) in concessive or selle-ks et (this:TRA + that) in causal and explanatory function), so far the development of such items has not been thoroughly studied.

Thus, in the present paper we set out to investigate the development of such complex units from the perspective of grammaticalization and pragmatisation. However, we do not contrast the two phenomena, but consider pragmatisation to be a type of grammaticalization. That is, we consider the development of the pragmatic function as a process of change where the outcome pertains to the level of discourse but follows the main mechanisms of grammaticalization (see Diewald 2011, Traugott 2010, Degand, Evers-Vermeul 2015). It will be demonstrated that the development of nii et has three stages, including (i) the starting point (two adjacent freely combined items located at the clause border); (ii) reanalysis of the source form as a complex conjunction; (iii) the development of a pragmatic marker accompanied by the shift to the left periphery (and eventually to the right periphery).

All these stages are present in the contemporary language. In addition to the functional differences, formal variation of the expression is observable. The formal variation within the grammaticalizing item ranges from purelyorthographic (punctuational) variation (nii, et ~ nii et) to univerbated forms (niiet) and (niet). Although orthographic variation has been often cast aside as irrelevant or secondary in linguistic analysis (Lieber, Štekauer 2009: 7–8, Haspelmath 2011a: 4, Haspelmath 2011b: 345) it has been suggested (Habicht, Penjam 2007 and Jürine 2011) that the development of Estonian complex grammatical words is associated with single-word-spelling. Thus, in addition to the
investigation of the functional change, we will test whether there is a connection between functional and formal variation of *nii et* ‘so that’, ‘so’. It will be demonstrated that the univerbated forms, indeed, tend to occur with the usages of *nii et* representing the later stages of grammaticalization.

An investigation of association between form and function demands, on the one hand, a substantially large dataset, and – as some of the orthographic forms fall out of the standardized language use – a database that includes non-standard language. Because we are interested in the formal variation of *nii et*, which is not observable in diachronic corpora, the most suitable data source for the present study is the etTenTen corpus, which is currently the largest corpus gathered from the Estonian Internet (270,000,000 words). Thus, the study is carried out from the synchronic perspective.

The article is structured as follows. In section 2, we give an overview of the theoretical framework, touching upon grammaticalization and pragmaticalization in respect to the development of *nii et* ‘so that’, ‘so’, the concept of re-cycling grammar, and formal changes in the process of grammaticalization. In section 3, we describe the method and data, in section 4 we present the results of the analysis of the functional as well as formal change of *nii et*. In section 5, we present the conclusions based on the analysis.

2. The theoretical background and the object of study

2.1. Grammaticalization/pragmaticalization in the development of *nii et* ‘so that’, ‘so’

The object of study (*nii et* ‘so that’, ‘so’) pertains to complex grammatical units in contemporary Estonian and is a prime example of language change that starts out from a freely combined conjunctive items and has currently reached a status of a complex pragmatic particle. In distinguishing between the freely combined items and complex units, we draw from studies on complex prepositions in various Indo-European languages, see e.g. Hoffmann (2005: 57), Lehmann (2002: 15–16), Moirón, Bouma (2003: 153), Adler (2008: 20), and complex postpositions in Estonian (see Jürine 2016). For instance, Jürine (2016: 61) suggests that similarly to complex adpositions in other languages the Estonian complex postpositions are multi-word units that have developed a new (abstract) meaning that is not directly derivable from
the meaning of its components and are, therefore, interpreted holistically. Although, according to Jürine, the status of a complex item is primarily determined by the development of holistic meaning, she suggests that in case of complex postpositions, the meaning change is also accompanied by formal changes that indicate grammaticalization (Jürine 2016: 62, 42–44).

Because the complex nii et ‘so that’, ‘so’ has a grammatical, more specifically a pragmatic function, the theoretical framework of this study is provided by grammaticalization theory (Lehmann 1985, Heine, Claudi, Hünnemeyer 1991, Heine, Kuteva 2002, Hopper, Traugott 2003) and pragmaticalization (Traugott 1995, Diewald 2011). Pragmaticalization is, in this case, accompanied by the development of discourse grammatical function. As discourse particles can also be considered to pertain to the domain of grammar, it is justified to view the process at hand based on the parameters of grammaticalization – desemanticization, decategorialization, extension, and erosion (Heine, Kuteva 2002: 2). The process of grammaticalization is often accompanied by generalization of meaning, increase in productivity, which is associated with development of new functions that enable the extension to new contexts, and phonetic erosion (reduction of form). Pragmatic particles primarily express discourse functions and, therefore, pragmaticalization can be viewed as grammaticalization of discourse functions (see Diewald 2011: 365–372). The development of pragmatic markers is often accompanied by expanding of scope (from proposition to discourse), new syntactic deployment, and inclusion of discourse function. Within the process of pragmaticalization, the pragmatic prominence increases, resulting in a discourse functional item. Pragmatic markers develop through reanalysis that takes place in a certain position, after which they extend from sentence level to discourse level.

The development of discourse markers has to do with their relation to the proposition, which is expressed by their position in the sentence. Although different kinds of particles may take various positions in the sentence, discourse markers are most often found in the periphery. In Estonian, discourse markers most often lay in the left periphery and less often in the right periphery of the sentence. As such, their primary function is to establish a link with the previous or the following discourse. Particles located in the left periphery are associated with the previous context. The primary function of the particles located in the right periphery is to suggest a follow-up to an unfinished thought or to connect the discourse with the previous text (afterthought) (see Metslang, Pajusalu, Habicht 2014: 140–141). Grammaticalization
of discourse particles may be observed in the context of growing (inter)subjectivity, which follows the continuum non-subjective (objective) > subjective > intersubjective (Traugott, Dasher 2002). Subjectivity indicates the speaker’s epistemic stance, their orientation to discourse structure. In addition to the speaker, intersubjective meaning also affects the interlocutor (Traugott 2003: 128).

2.2. Recycling grammar

The rise of pragmatic particles is associated with the tendency to ‘re-cycle’ already available items by using them in new functions. This helps to maintain optimal use of resources in language. However, language users need to be able to distinguish each function. This means that language strives to find the balance between flexibility and identifiability. (Anward 2000: 38–39) Re-cycling already available grammatical items has also been discussed in Jürine and Habicht (2013) and Jürine (2016) with respect to the development of Estonian complex postpositions. As there are considerable parallels in the developmental paths of nii et ‘so that’, ‘so’ and complex postpositions, the topic of re-cycling is addressed here in greater detail.

Jürine and Habicht (2013) describe the development of complex postpositions as an instance of cyclic development whereby a grammatical item (e.g. the simple postposition kõrval ‘beside’) re-enters the grammaticalization process in combination with a lexical item (e.g. käe kõrval ‘hand + beside’) and, therefore, becomes a part of a new, holistic complex grammatical unit, which sometimes carries a close or similar meaning to the simple gram (ema käekõrval ‘beside mother’). Thus, re-cycling of grammar is not a typical instance of grammaticalization whereby a lexical (or grammatical) item becomes more grammatical because, in this case, the grammatical item re-enters the grammaticalization process together with a lexical item. Thus, the outcome is more complex, more transparent, and therefore less grammatical than the simplex form. The process is, nevertheless, considered grammaticalization because the outcome is a new grammatical item. As such, the re-cycling is not the continuance of the same grammaticalization process but rather the beginning of a new one.

The development of the complex nii et ‘so that’, ‘so’ is also considered to be an instance of recycling grammar. In this case, the process starts from the stage where the simple conjunction et ‘that’ freely combines with a lexical pro-adverb expressing manner nii ‘so’ (example 1)
and the outcome is a complex conjunction (2) (see Erelt et al. 1993: 110–111, Palmeos 1985: 3). In the course of the development of the complex conjunction, the simple conjunction et ‘that’ re-enters the grammaticalization process with the adverbial component nii ‘so’ and becomes a holistic unit. In this case too, the outcome nii et is more transparent and contentful than the simple conjunction et ‘that’. However, since the outcome as a whole functions as a conjunction, this development is considered to be an instance of grammaticalization. The present paper aims to take a closer look at this process, describing its stages.

(1) Müüa tuleb nii, et hiljem ei peaks kaubale peale maksma. 
[www.raamatupidaja.ee] ‘You need to sell in such a manner that you will not have to pay more than you earned’

(2) Sa tule varem, nii et me jõuaksime nelja silma all rääkida. 
(Erelt et al. 1993: 111) ‘Come early, so that we have time to talk privately’

2.3. Formal changes

The development of complex grammatical items in Estonian is to some extent accompanied by formal changes. It is usual that grammaticalizing items go through phonetic modifications, and when the phonetic change has been established, it may be reflected in the orthography. Only then, the change becomes observable in the written form of the language. However, the formal change discussed in respect to Estonian complex postpositions is observable only in written language, namely in spelling the complex item as two words or as a single word (univerbation). For example, Habicht and Penjam (2007) have suggested that the

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1 Sometimes, the recycling of grammar is observable on many levels at once. For instance, the complex postpositions käekõrval ‘beside, accompanied by’ and kaela peal ‘burdening (somebody)’ include the simple postpositions kõrval ‘beside’ and peal ‘on’, whose origin is still transparent, i.e. they are still segmentable in contemporary Estonian into combinations of the lexical stem and case ending (kõrva-l (ear-ADE) and pea-l (head-ADE)) (Jürine 2016: 86). A multi-level analysis is also available for the complex conjunction nii nagu (so + as), which as a complex item expresses the meaning ‘as’ but also occurs as freely combined item ‘in the manner that’, whereas the second component nagu ‘as’ is historically derived from the phrase nõnda kui (like + as) (Metsmägi et al. 2012).
relatively wide-spread tendency to spell certain Estonian postpositional phrases as one orthographic word is a manifestation of them developing into complex postpositions (Habicht, Penjam 2007: 53). In addition, Jürine (2011: 909) has found an association between single-word-spelling and semantic change (holistic interpretation) of some postpositional phrases. However, there has been quite a lot of criticism on accounting for orthography in order to distinguish between compounds and phrases or to define ‘word’ as a linguistic unit (Lieber, Štekauer 2009: 7–8, Haspelmath 2011a: 4, Haspelmath 2011b: 345). Thus, the role of spelling is anything but clear in the development of Estonian complex grammatical items.

The present phenomenon – grammaticalization/pragmaticalization of nii et ‘so that’, ‘so’ – displays two types of formal variation – the first one has to do with punctuation and the second one with univerbation and reduction. According to Grammar of Estonian (Erelt et al. 1993) when used as a free combination of a pro-adverb and a simple conjunction, the components are always separated by a comma that marks the border of the clause (see example (1) above). When nii et ‘so that’ is used as a complex conjunction, it forms a functional whole, and therefore there can be no comma between its components (see example 2 above) (Erelt et al. 1993: 111, Erelt 2011: 141–142). The other type of formal variation has to do with univerbation of the components, which is not standardized (so far). Namely, it has been observed that, in unedited texts, nii et is often written as single word (niiet) and it appears in a shortened variant (niet). Furthermore, it has been suggested that there is an association between the univerbated forms and function (Põldaru 2016).

Thus, in the present paper we set out to investigate whether there is a connection between the formal and functional variants of nii et ‘so that’, ‘so’, while bearing in mind that the four formal variants (nii, et, nii et, niiet, and niet) form a continuum in respect to how they relate to the language standard. That is, we expect a stronger association between the use of comma and the holistic interpretation as it is (already) in line with the language standard, and weaker association between the univerbated forms and holistic interpretation because it is not in line with the standard and these forms are considered ‘incorrect’. However, we argue that, if such correlation exists, the forms niiet and niet suggest a tighter bond between the components of nii et than the two-word forms nii et and nii, et.
3. Method and data

The data comes from the etTenTen corpus (270,000,000 words), which is currently the largest corpus of Estonian. The corpus consists of language data gathered from 686,000 Estonian web pages belonging to various domains. For instance, the data has been retrieved from official web pages and online newspapers as well as from forums, comments and blogs. As such, it provides examples of standardized language as well as natural language use that does not necessarily meet the standard. As we are interested in functional and formal change, this kind of material is suitable for the present study.

A query was made for each orthographic variant (nii, et; nii et; niiet; niet). The results of these queries were randomized and a sample consisting of 250 examples of each form was compiled. Because the search for the reduced form (niet) did not provide enough examples, an additional search with Google search engine was performed. As there was a slight overlap in the Google and corpus results, the duplicates were removed from the dataset manually. Thus, the data analyzed for the present study consist of 862 examples of nii et (250+250+250+112).

The data was coded by two researchers. The coding schema was developed in the process and is based on the actualization of the studied phenomenon in actual language use, and as such, it does not match the previous studies (e.g. Põldaru 2016) one for one. In addition to the formal criterion (i.e. the orthographic variants of nii et), the data was coded for three other factors – ‘Analysis’, ‘Function’, and ‘Position’. The factor ‘Analysis’ has two levels – ‘compositional’ and ‘holistic’, which indicate whether nii et is analyzed compositionally or as a holistic unit; the factor ‘Function’ has three levels, which indicate the function carried by nii et (MANNER+CONJUNCTION, CONSEQUENCE, CONCLUSIVE); the factor ‘Position’ indicates the position of nii et in the sentence. This factor has three levels – sentence-initial, sentence-internal, and sentence-final.

We assumed that these factors help to track down the course of grammaticalization/pragmaticalization of nii et. For instance, the holistic interpretation is suggested to indicate the status of complex conjunctionhood, i.e. grammaticalization; the sentence-initial and sentence-final positions suggest a shift to left and right periphery, which indicates pragmaticalization. The factors and levels are presented in Table 1.

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Table 1. The factors and levels for which the material of *nii et* ‘so that’, ‘so’ was coded.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Analysis</th>
<th>Function</th>
<th>Position</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levels</td>
<td>Compositional</td>
<td>MANNER+CONJUNCTION</td>
<td>S-Initial</td>
<td>With comma</td>
</tr>
<tr>
<td></td>
<td>Holistic</td>
<td>CONSEQUENCE</td>
<td>S-Internal</td>
<td>Without comma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONCLUSION</td>
<td>S-Final</td>
<td>Orthographic word</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reduced form</td>
</tr>
</tbody>
</table>

4. Results and discussion

4.1. Functions of *nii et* ‘so that’, ‘so’

The analysis revealed that *nii et* ‘so that’, ‘so’ occurs in three functions: **MANNER+CONJ.**, **CONSEQUENCE**, and **CONCLUSION**. The distribution of these functions is depicted in Figure 1, which shows that the majority (69%) of the 862 examples represent the holistic interpretation. In addition, it can be observed that holistically interpreted *nii et* mostly (63% of all the examples) carries the conclusive function whereas the consecutive function is rather rare (6% of the sample). The instances of freely combined *nii et* make up just over a third of the data sample.

![Figure 1](image_url)  

**Figure 1.** The distribution of functions of *nii et* ‘so that’, ‘so’ (n = 862).
The function MANNER + CONJ. is represented by examples that show the starting point of the development. It can be illustrated by sentences such as (3) where nii ‘so’ serves as a pro-adverb that modifies the verb (olema ‘be’) and is followed by the subordinate clause starting with the simple conjunction et ‘that’ expressing the manner of feeling.

(3) Maybell, tean, mida Sa tunned, tihti on endal samuti nii, et ei tahagi üles ärgata, sest nii põnev on liikuvaid pilte vaadata ja uusi asju kogeda. [pesa.ingliabi.ee]

‘Maybell, I know what you feel; often times it is so that I do not want to wake up because it is so interesting to watch the moving pictures and experience new things’

Such usages only occur in the sentence-internal position, i.e. nii ‘so’ and et ‘that’ are only combined on the border of the main clause and the following subordinate clause (as in (3) above). This position is thus the locus of change, whereby formerly freely combined nii et is reanalyzed as a complex conjunction nii et, which as a holistic unit, now belongs to the subordinate clause (see example 4). Thus, the border of the main and subordinate clause shifts, so that the subordinate clause (underlined in example 4) now starts with the complex conjunction nii et.

(4) Kruusingu sõnul on üks näitus vaadata keskmiselt kuu aega, nii et kokku on neid olnud ligi 250. [www.le.ee]

‘According to Kruusing, one exhibition is up one month on the average, so altogether there has been 250 exhibitions’

As a complex conjunction, nii et has two functions – consecutive and conclusive. Whereas the complex conjunctions that carry the conclusive function (see the above example 4) are easily distinguishable from the freely combined nii et, the consecutive function is closer to the source form. For instance, example (5), which illustrates the consecutive complex conjunction, is semantically rather close to example (3) above. The difference between such usages lies in the sentential context. In the case of the consecutive complex conjunction, the events described in the linked clauses are more distant from each other than in the case of freely combined nii et. For instance, in example (5), the subordinate clause does not express the manner in which the protecting coat should be placed over somebody, but rather it provides a consequence of that action. Example (6), as a bridge between freely combined and consecu-
tive nii et, has both interpretations. Such examples are comparable to usages of nii et that occur in what Erelt (2014: 92) calls consecutive manner clauses.

(5) Palun ümbritse mind ka oma kuldse valgusega ning aseta oma sündsinine kaitsev mantel mu üle, nii et ainult kõige puhtam ja kirkam valgus võiks mu aurasse siseneda. [pesa.ingliabi.ee]

‘Please surround me with golden light and place your deep blue protecting coat over me so that only the purest and brightest light could enter my aura’

(6) Iga päev peaks tarvitama tervislikke omega-3, omega-6 ja omega-9 rasvhappeid sisaldavaid külmpressitud õlisid nii, et erinevad rasvhapped oleksid õiges vahekorras. [alkeemia.ee]

‘One should use healthy cold pressed Omega-3, Omega-6 and Omega-9 fatty acids in such a manner that various fatty acids would be in the right proportions’

There is also a gray area between the consecutive and conclusive complex conjunction. While clauses with consecutive conjunctions express a consequence of the event in the main clause, the conclusive conjunctions mark the next stage, and are used to draw a conclusion. As such, the consecutive nii et makes a reference to the previous discourse whereas the conclusive nii et leads the discourse forward by adding information. The conclusion is made based on a larger chunk of context than just the previous clause, including the interlocutor in the conclusive relation as well. Therefore, the development of the conclusive nii et is an instance of intersubjectivization. As an example of a bridging context between consequence and the conclusive function, (7) allows both interpretations.

(7) Ja palju rahvast kogunes tema juurde, nii et ta pidi astuma paati ja maha istuma. [ww.eelkrapla.ee]

‘And a large crowd soon gathered around him, so he got into a boat.’

Thus, the data show that on the one hand, there is a gradual transition between the freely combined nii et and the consecutive complex conjunction, and on the other hand, between the consecutive conjunction and the conclusive conjunction. This suggests the following path

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3 For the statistical analysis, examples of the bridging context are coded as freely combined items.
of development: the freely combined manner pro-adverb nii ‘so’ + conjunction et ‘that’ has developed into a complex unit that expresses CONSEQUENCE and then further on to express CONCLUSION (see Figure 2). As this process involves a semantic shift towards more abstract uses, whereby the lexical content of the adverb is fading, it is considered as desemanticization.

Function: MANNER+CONJ. > CONSEQUENCE > CONCLUSION
Structure: Freely combined > Complex unit > Complex unit

Figure 2. The path of development of complex conjunction nii et ‘so that’, ‘so’.

The path of development illustrated above is also supported by the evidence about the position of nii et in the sentence. The data reveals that nii et only occurs in the sentence-internal position when expressing MANNER+CONJUNCTION as well as CONSEQUENCE, whereas the conclusive complex conjunction may occur in the sentence-internal position as well as in the sentence-initial or sentence-final position (see Table 2).

Table 2. The distribution of the functions of nii et ‘so that’, ‘so’ relative to its position in the sentence (n = 862).

<table>
<thead>
<tr>
<th>Position</th>
<th>Compositional</th>
<th>Holistic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MANNER</td>
<td>CONSEQUENCE</td>
<td>CONCLUSION</td>
</tr>
<tr>
<td>S-Initial</td>
<td>0</td>
<td>0</td>
<td>225</td>
</tr>
<tr>
<td>S-Internal</td>
<td>266</td>
<td>50</td>
<td>316</td>
</tr>
<tr>
<td>S-Final</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>266</td>
<td>50</td>
<td>546</td>
</tr>
</tbody>
</table>

Thus, the shift from compositional to holistic usages happens in sentence-internal position. Relocation to the sentence-initial position makes it possible for the unit to be detached from the rest of the sentence grammatically, allowing the complex item to be used as a particle to connect larger parts of discourse and, thus, serve as a pragmatic particle (as in (8)). The shift in position as well as in category is considered to manifest extension and decategorialization of nii et. Sometimes such examples are separated from the rest of the sentence with a comma (9) or another punctuation mark (a dash or ellipses), which may emphasize its grammatical disassociation from the rest of the sentence. It can be
observed that in (8), *nii et* occurs in the beginning of the main clause. As such, it could be considered a manifestation of insubordination. Evans (2007: 336) defines insubordination as “the conventionalized main clause use of what, on *prima facie* grounds, appear to be formally subordinate clauses”. In this case, we see a development where a linguistic device, which is formerly used as a subordinate conjunction, is used in the beginning of the main clause.

(8)  *Nii et sa oled tänava väga palju uut õppinud.* [algernon.ee]
‘So you have learned so much new today’

(9)  *Nii et, kui oled ennustusteusku, siis soovitan Taro kaarte.*
[pesa.ingliabi.ee]
‘So if you believe in fortune telling, I recommend you the Taro cards’

As can be observed in Table 2, the sentence-final position is very rare in our data sample. Nevertheless, examples such as (10) are considered to illustrate usages where *nii et* ‘so’ suggests a follow-up to an unfinished thought. On three occasions of the total of 5 examples where *nii et* was located at the end of the sentence, it was followed by *jah* ‘yeah’ (11). Based on the available examples, it seems that *nii et jah* ‘so yeah’ is a conclusive-confirming marker of an unfinished train of thought, which also marks the end of the turn.

(10)  *Aga, eesmärk pühitseb abinõu nii et ...* [vana.geopeitus.ee]
‘But the end justifies the means, so …’

(11)  *ema plnud nõus see mul juba aasta ja ema ei eta [=tea] siiamaani nii et jah ...* [www.hambaarst.ee]
‘My mom would not agree I have had it for years now and my mom still does not know so yeah …’

However, sometimes *nii et jah* ‘so yeah’ marks the beginning of the end of the turn. This can be observed in (12) where *nii et jah* ‘so yeah’ is located at the beginning of the sentence, which most likely starts the conclusion based on the former discourse. In this case the turn is not left unfinished, but the conclusion follows the pragmatic marker similar to examples (8) and (9). Another curious example is illustrated in (13), where *nii et* ‘so’ located in the left periphery occurs in a question, which does not include other specific question markers. This example may suggest the rise of secondary question markers which have developed based on other pragmatic items (see Hennoste et al. 2016: 95–98).
Thus, the data show that in addition to the distinction between the freely combined \textit{nii et} and holistic \textit{nii et}, two functions – consecutive and conclusive – can be distinguished. Moreover, the data suggest that the conclusive \textit{nii et} that has moved to the left periphery of the sentence has the capability to link larger chunks of discourse and can be, hence, analyzed as a pragmatic marker. In rare cases, \textit{nii et} has shifted to the right periphery where it serves as a conclusive-confirming marker that also marks the end of the turn. Thus, the path of development of the pragmatic marker \textit{nii et} is depicted in Figure 3.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
\textbf{Function:} & \textbf{MANNER+CONJ.} & \textbf{CONSEQUENCE, CONCLUSION} & \textbf{CONCLUSION} \\
\hline
\textbf{Structure:} & Freely combined & Complex grammatical unit & Complex pragmatic unit \\
\hline
\textbf{Position:} & S-Internal & S-Internal & Left periphery Right periphery \\
\hline
\end{tabular}
\caption{The path of development of complex pragmatic particle \textit{nii et} ‘so’.
}
\end{table

4.2. Association between the formal and functional change

When looking at the association between functional and formal change, the data indicate that the more tightly bound formal variants tend to occur when \textit{nii et} is used as a holistic unit. In addition, the data show that the univerbated forms are associated with the peripheral position in the sentence.

It can be observed in Table 3 that the instances analyzed as representing the compositional \textit{nii et} tend to be written with a comma separating the two components (\textit{nii, et}) and that the holistically analyzable \textit{nii et} prefers the variant without a comma and the univerbated forms (single-word-spelling and reduced forms). These results are also
statistically significant ($X$-squared = 727.04, df = 3, $p$-value < 0.001). The Pearson’s residuals presented in Table 4 confirm that the observed frequency of compositional forms used with the comma and compositional forms without the comma or written as an orthographic word is much greater than the expected frequency. The residuals also suggest that the strongest effect is the presence of comma with the compositional forms (18.9) and lack of comma in holistic forms (–12.6), followed by the dispreference of single-word-spelling among compositional forms (–8.1). The effect size indicated by Cramer’s $V$ is very strong ($V = 0.91$), suggesting a near-perfect correlation (see Gries 2014: 371).

**Table 3.** The distribution of the formal variants of *nii et* among the instances of compositional and holistic usages in absolute numbers.

<table>
<thead>
<tr>
<th>Form</th>
<th>Compositional</th>
<th>Holistic</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>With comma</td>
<td>243</td>
<td>7</td>
<td>250</td>
</tr>
<tr>
<td>Without comma</td>
<td>14</td>
<td>236</td>
<td>250</td>
</tr>
<tr>
<td>Orthographic word</td>
<td>6</td>
<td>244</td>
<td>250</td>
</tr>
<tr>
<td>Reduced</td>
<td>3</td>
<td>109</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>266</td>
<td>596</td>
<td>862</td>
</tr>
</tbody>
</table>

**Table 4.** Pearson’s residuals of the formal variants of *nii et* among the instances of compositional and holistic usages.

<table>
<thead>
<tr>
<th>Form</th>
<th>Compositional</th>
<th>Holistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>W comma</td>
<td>18.9</td>
<td>–12.6</td>
</tr>
<tr>
<td>W/o comma</td>
<td>–7.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Orthographic word</td>
<td>–8.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Reduced</td>
<td>–5.4</td>
<td>3.6</td>
</tr>
</tbody>
</table>

It is not very surprising that the data show an association between the presence of comma and compositional interpretation of *nii et*, on the one hand, and the omission of comma and holistic interpretation on the other hand. As suggested above, in the case of compositional usage, the border of the clause runs between the two components – *nii* ‘so’ and *et* ‘that’ – and the comma usage between the main clause and the subordinate clause is standardized. However, a more interesting result, which is not so obviously explainable with the rules of grammar, is the tendency of the holistic usages to prefer the univerbated forms, i.e. the forms spelled as an orthographic word (14) or the reduced form (15).
This suggests that the univerbation of the components of a complex item is associated with the shift in its function.

(14) *Ma ei leidnud eraldi Brita-koogi teemat, niiet kūsin siis siin.* [nami-nami.ee]
   ‘I did not find a separate thread on making Brita cake, so I will ask here’

(15) *Mui de õhtul kell 9 läheb raplst järtsu buss ja kell 5 peaks tagsi tulema niiet transport olemas.* [www.buduaar.ee]
   ‘By the way the bus from Rapla to Järvakandi leaves tonight at 9 and it should be back [here] by 5 so you have the transport’

Of course, the tendency is not absolute. There are examples where *nii et* with single-word-spelling or even the reduced form (16) is used to express the compositional structure. Example (16) can also be explained with the fact that *nii et tolmus* ‘quickly, enthusiastically, roughly’ lit. ‘so that dust flew’ is an idiomatic expression. Thus, it is also possible that the univerbation is associated with the semantic bleaching of the components of the larger meaningful unit. This suggests iconicity of the formal change. In each case, as can be observed in Table 3 above the absolute frequency of such usages is only 6 and 3 instances among the single-word and reduced forms accordingly. Thus, the data show convincingly that the occurrence of univerbated forms is not random but there is a strong association between functional and formal change of complex grammatical items.

(16) *Teadlased seadsid selle kahtluse alla ja said piki nina, nii et tolmus.* [forte.delfi.ee]
   ‘Researchers called it in question and were roughly defeated /lit. … and were hit in their nose so that dust flew’

The data also indicate that *nii et* is more likely to be univerbated in a peripheral position (see Table 5). It can be observed in Table 6 that while *nii et* without the comma has no strong preference as for its position in the sentence, *nii et* spelled with a comma strongly disprefers (–7.6) the peripheral position. The dispreference of *nii, et* in the periphery is also the strongest effect, followed by the preference of univerbated forms to be positioned in the periphery. This result is

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4 Because the sentence-final position is quite rare in our dataset in general (only 5 instances), the examples of the sentence-initial and final position of *nii et* ‘so that’ are henceforth viewed together as a category of peripheral position.
statistically significant ($X^2 = 119.54$, $df = 2$, $p$-value < 0.0001). The effect size is intermediate ($V = 0.37^5$).

**Table 5.** The distribution of the formal variants of *nii et* in S-Internal and peripheral position in absolute numbers.

<table>
<thead>
<tr>
<th>Form</th>
<th>Periphery</th>
<th>S-Internal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>W comma</td>
<td>5</td>
<td>245</td>
<td>250</td>
</tr>
<tr>
<td>W/o comma</td>
<td>75</td>
<td>175</td>
<td>250</td>
</tr>
<tr>
<td>Univerbated</td>
<td>150</td>
<td>212</td>
<td>362</td>
</tr>
<tr>
<td>… orthographic word</td>
<td>99</td>
<td>151</td>
<td>250</td>
</tr>
<tr>
<td>… reduced</td>
<td>51</td>
<td>61</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>230</td>
<td>632</td>
<td>862</td>
</tr>
</tbody>
</table>

**Table 6.** Pearson’s residuals of the formal variants of *nii et* in the S-Internal and peripheral position.

<table>
<thead>
<tr>
<th>Form</th>
<th>Periphery</th>
<th>S-Internal</th>
</tr>
</thead>
<tbody>
<tr>
<td>W comma</td>
<td>–7.6</td>
<td>4.6</td>
</tr>
<tr>
<td>W/o comma</td>
<td>1.0</td>
<td>–0.6</td>
</tr>
<tr>
<td>Univerbated</td>
<td>5.4</td>
<td>–3.3</td>
</tr>
<tr>
<td>… orthographic word</td>
<td>4.0</td>
<td>–2.4</td>
</tr>
<tr>
<td>… reduced</td>
<td>3.9</td>
<td>–2.3</td>
</tr>
</tbody>
</table>

The standard grammar of Estonian states that *nii, et* combines the main clause with the subordinate clause. It is therefore not surprising that *nii et* spelled with a comma is not likely to occur in the beginning of a sentence. While there are a few examples of sentence-initial *nii, et* (as in 17), there are no such usages at the end of the sentence. Nevertheless, a much more interesting result is the tendency of peripheral position to attract the univerbated forms. Such usages in the peripheral position are interpreted as pragmatic particles (as in 18). The sentence-final and sentence-initial positions are not differentiated from one another in statistical analysis due to lack of data. However, it should be noted that

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5 $p$ and Cramer’s $V$ are calculated based on a dataset where all of the univerbated forms are taken together as one category. However, the significance and effect size are rather similar when the category is broken down into two – instances spelled as an orthographic word and reduced forms. When the univerbated forms are taken together, $p < 0.0001$ and $V = 0.372$, and when taken separately, $p < 0.0001$, $V = 0.375$. 
out of 5 instances of *nii et* in the sentence-final position, 2 were examples of single-word-spelling without reduction (see 11 above) and 2 of reduced forms (19).

(17) *Nii, et tuleb ette vaadata mida soovida.* [pesa.ingliabi.ee]
‘So be careful what you wish for’

(18) *Niet- kas siis on keegi veel?* [www.ulme.ee]
‘So is there anybody else then?’

(19) *Olime sees 5 min, niet jah ....* [www.nupsu.ee]
‘we were in there [the doctor’s office] for 5 minutes, so yeah …’

As was suggested above, *nii et* in the peripheral position has the capability to link larger chunks of discourse and is, thus, interpretable as a pragmatic particle. The tendency of the univerbated forms to occur in the periphery suggests a new stage in the development of a complex item, i.e. the possibility of occurrence of the pragmatic function associated with the univerbated form. It is possible that as a pragmatic particle, *nii et* is grammatically further dissociated from the rest of the sentence and is, therefore also functionally further from its source – the manner pro-adverb *nii* ‘so’ and conjunction *et* ‘that’. The data show that this dissociation is also manifested in the form.

5. Conclusion

In the present paper we investigated Estonian *nii et* ‘so that’, ‘so’, which functions as a free combination of pro-adverb *nii* ‘so’ and simple conjunction *et* ‘that’ as well as a complex conjunction (Erelt et al. 1993: 111). It was demonstrated that as a complex conjunction, *nii et* expresses two functions – consecutive and conclusive, which is in line with previous research (Erelt 2011: 141). The aim of the present paper was a more thorough analysis of *nii et* and its functions in order to get some insight into its developmental path and more recent changes unaccounted for so far.

Based on the function of *nii et* and its position in the sentence, we suggest the following chain of development: freely combined pro-adverb expressing *MANNER* and a simple conjunction *et* ‘that’ > complex conjunction expressing first *CONSEQUENCE* and then *CONCLUSION*. The shift from freely combined *nii* ‘so’ and *et* ‘that’ to the complex item
nii et ‘so that’, ‘so’ displays changes analyzable as manifestations of parameters for grammaticalization (Heine, Kuteva 2002) – desemantization, decategorialization, and extension as well as reduction of form. This change is in line with general principles of grammaticalization as it displays a logical shift towards more abstract uses. The same shift is observable in languages not related to Estonian, such as English (so that) and Dutch (zodat). According to Dutch grammars (Van Dale online Dictionary and Taalportaal), the Dutch zodat ‘so that’ serves as a subordinate conjunction expressing consequence. The English so that is also used as a subordinate conjunction expressing purpose or explanation. According to the Cambridge Dictionary, so that can also express the meaning ‘with the result that’. As such, they are comparable with the Estonian nii et ‘so that’. However, the latter has also developed a pragmatic function.

The pragmatic function is observable in examples where nii et expresses conclusion. The shift from consecutive to conclusive function is considered to be manifestation of subjectification because consequence is rather an objective meaning and conclusion a subjective meaning. As a conclusive item, nii et has shifted into the sentence-initial or sentence-final position, i.e. the left or right periphery. The right periphery particles are much rarer in Estonian than left periphery particles. In the few occurrences attested in this study, the right periphery nii et expresses an afterthought and marks the end of the turn. In addition to the speaker’s attitude it also contains an offer to continue directed at the interlocutor. It is therefore analyzed as an intersubjective item, which mostly occurs in collocations nii et jah ‘so yeah’. Thus, we see that the whole process is characterized by broadening of the scope of a linguistic expression. When developing into a complex conjunction, nii et broadens its scope over the whole clause. When moving to the periphery and becoming a pragmatic particle, the scope of nii et ranges over larger chunks of discourse (see also Traugott, Dasher 2002: 40; Traugott 2003; Diewald 2006).

The development of a complex conjunction displays similar characteristics to that of other complex grammatical words. Similar to complex adpositions in general (see e.g. Hoffmann 2005, Sigurd 1993, Moirón, Bouma 2003) as well as Estonian complex postpositions (Jürine 2016), the complex nii et ‘so that’, ‘so’ develops from a free combination of a lexical and a simple grammatical item. In all cases, the crucial aspect of the development of the complex item is the development of the holistic interpretation, whereas a single complex item can bear several
functions (e.g. *CONSEQUENCE*, *CONCLUSION*). At the same time, there are considerable differences between the development of *nii et* and that of complex adpositions. Complex adpositions are formed based on components that belong to the same phrase in the source form but components of complex conjunctions belong to different clauses so that the development of a complex conjunction brings about reanalysis of the clause border. As such, this development has mutual traits with insubordination (see Evans 2007).

Another mutual trait of the development of *nii et* and Estonian complex postpositions is displayed in orthography. Like complex postpositions (see Habicht, Penjam 2007, Jürine, Habicht 2013), *nii et* is also spelled as an orthographic word. Moreover, the actual language use also displays reduced forms. The data indicate that, in this case, the single-word-spelling (univerbation) is clearly associated with functional change, i.e. the rise of holistic interpretation. Moreover, the results indicate that the single-word-spelling is also associated with the peripheral position (mostly left periphery). This, of course, logically follows the result that was previously introduced. Namely, *nii et* is more often holistically interpreted in the peripheral position than in the sentence -internal position, and therefore the single-word usages are more likely to be associated with usages in the peripheral position. As the shift to peripheral position in our view indicates a further stage (pragmaticalization) in the development of *nii et*, it is quite expected that such usages are regarded (by language users) as orthographic words.

While it is true that orthography is generally an unreliable indicator for linguistic analysis (Haspelmath 2011a: 4, 2011b: 345, Lieber, Štekauer 2009: 7–8), the present study shows that in this case, there is association between the compositional vs. holistic interpretation and the choice of the orthographic variants. Of course, this result should be viewed against the backdrop of the highly regular compounding system of Estonian, where all compounds are written as a single word. Although the development of the complex *nii et* is not an instance of compounding but univerbation, the same principle – spelling adjacent words that have developed an independent meaning as a single word (Erelt *et al.* 2007: 51) – still applies. Thus, it seems that language users apply this principle to *nii et* even though the single-word-spelling has not been standardized. This is not meant to suggest that all words that are spelled as a compound should be considered as compounds, nor that every single instance of the orthographic variant *niet* or *niet* should be automatically considered to be a complex unit. Our view is in line with that of Haspelmath (2011b: 345–346) in that the coalescence of the
components into a complex unit is a gradual process and the shifts from one category to another are not taken as abrupt. What we propose is that, in this case, the orthographical variability is not random, but is clearly motivated by the functional change. As such it can be considered as one of the factors (but not the defining factor) describing the development of complex units in Estonian. This suggests that in languages that differentiate between phrases and compound words with spelling, e.g. Czech and Slovak (Lieber, Štekauer 2009: 7–8) and Estonian (Viitso 2003: 85), the formal changes that accompany grammaticalization can be observed in orthographic variation. This variation does not necessarily reflect a phonetic or prosodic change. Nevertheless, it is quite possible that this development is also accompanied by prosodic changes. For instance, it has also been pointed out by Habicht, Keevallik, Tragel (2006: 619–620) that in informal language use nii et has fused into a phonological word with a specific meaning. However, to our knowledge the association of phonetic or prosodic change and functional change has not yet been tested in a systematic way.

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Address
Anni Jürine, Külli Habicht
Institute of Estonian and General Linguistics
University of Tartu
Jakobi 2
51014 Tartu, Estonia
E-mail: anni.jurine@ut.ee, kulli.habicht@ut.ee

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Kokkuvõte. Anni Jürine ja Külli Habicht: Liitsete üksuste grammati-
seeerumine: eesti keele nii et. Artiklis käsitletakse liitüksuste grammati-
seeerumist (pragmatiseerumist) eesti ühendsidesõna nii et näitel. See algse-
eri lauseosadesse kuulunud sidendav üksus on reanalüüsitud esmalt alista-
statud osalauset alustavaks ühendsidesõnaks ja lõpuks lause perifeeriatesse paikne-
vaks pragmaatiliseks partiklikks. Sünkroonilises korpusuuringus analüüsitakse
862 kasutusjuhtu ning selgitatakse välja vormi ja funktsiooni seosed grammati-
seeerumisprotsessis. Üksusel on neli vormivarianti (nii, et; nii et; niiet; niet) ja
tema funktsioonid on kujunenud ahelas VIIS > TAGAJÄRG > JÄRELDUS. Üksuse
areng järgib grammatiseerumise keskseid mehhanisme (desemantiseerumine,
dekategoriseerumine, ekstensioon, erosioon) ja on seotud grammatika taas-
kasutuse, insubordinatsiooni ning lause perifeeriate pragmaatiliste rollidega.

Võtmesõnad: liitne grammatikaüksus, pragmatiline partikkel, grammati-
seeerumine, pragmatiseerumine, grammatika taaskasutus, lause perifeeriad,
insubordinatsioon, eesti keel