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Connectives and order. A Tiernet analysis of the Estonian causative connective seeläbi ‘through that’

Geda Paulsen

Abstract: This article focuses on the notion of order in language from three different perspectives: the order of causation, clause order, and word order. Based on the micro-modular Tiernet model (Nikanne 1990, 1995, 1997a–b, 2008, 2018a; Paulsen 2011a–b; Petrova 2011; Paulsen & Nikanne 2019) I analyze the Estonian proadverb seeläbi ‘through that’ and its functions as a connective adverb, correlative adverb, and correlative conjunction. The examination shows that seeläbi encodes both types of subordinate causation (BECAUSE OF, LEAD TO); it has properties of both subordinate and coordinate clausal types; it can be placed to initial, medium, or final positions in the clause and link to all three information tier functions (FOCUS1, TOPIC, and FOCUS2). The study reveals a linking rule: the causative subordination type BECAUSE OF (the reason behind the matrix clause situation) is related to the subordinate and the LEAD TO-causation (the effect or result of the matrix clause situation) to the cosubordinate clausal type.¹

Keywords: connectives, causation, word order, clausal order, conceptual structure, Estonian

1 Introduction

A causative expression entails a specific relationship between two poles, the causer or the causing event and the resulting event – the occurrence of one situation, the cause, leads to the occurrence of another situation, the result (Paulsen and Nikanne 2019: 267). Characteristically, a causative situation implies that the resulting situation would not exist without the appearance of the cause (or the crucial contributory factor as Neeleman & van de Koot 2012 term it). There are multiple linguistic means available to express causation in natural languages, divided into three general types according to their form:

a) lexical (e.g. the verbs push, break or conjunctions because, since);

b) morphological (e.g. the Finnish verbal tta-derivatives as kävely-tätä [walk-CAUS] ‘make someone walk’ or the illative cause in Hän kuoli myrkytysen [poison-ILL] ‘He died of poisoning’);

c) analytic (the periphrastic constructions as Mom had me go to the shop or adpositional phrases as I fell because of you).

¹ The ideas developed in this article are a continuation to my PhD dissertation accomplished under the supervision of Urpo Nikanne and our cooperation thereafter. The opportunity to work together with Urpo for several years is a great privilege I am extremely thankful for. With gratitude, I dedicate this little study of causation to him. I would also like to thank the two anonymous referees for their valuable comments on this article. This work was supported by the Estonian Research Council grant PSG227.
Causation can be found both inside the core sentence (within the argument structure) and outside of it, manifested e.g. by diverse adjunct constructions. To the means of so-called peripheral causation belong also some connectives – expressions that convey causative implications while connecting and relating together clauses, sentences, and paragraphs. In a broader sense, the term *connective* comprises conjunctions, copulas, and connective adverbs (or sentence connectives), but it is generally also used to denote only the last of the above-listed classes, i.e. *connective adverbs*. In this study, I use the term connective as the umbrella term and focus on its subtypes, connective adverbs and conjunctions, through a case study: the causative semantics and syntax of the Estonian connective adverb *seelübi* ‘through that, thereby’, and its combinations with the conjunction *et* ‘that’.

Connectives do not only indicate syntactic-semantic relations but the structural organization of discourse, marking structural shifts (instructing the hearer or reader about how to update the discourse model) and functioning as “clue words” (see e.g. Cohen 1984, Grosz & Sidner 1986). The function of connectives on the discourse level is to maximize the relevance of the utterance and minimize processing costs (see e.g. Blakemore 1987, Moeschler 2018: 136). The role of connective adverbs in the text is, basically, similar to that of conjunctions: they are connectors that join together two ideas or sequences. There are, however, differences in syntactic and semantic behavior between these two groups. While conjunctions connect parts of a clause or clauses, connective adverbs may link together clauses, sentences, or even larger text sequences. In a sentence, conjunctives are placed at the boundaries of the sections they connect, but the position of connective adverbs is not fixed – they usually are but do not have to be placed at the initial position of a clause. The functional distribution appears also via the tendency that verbal complements are expressed rather by conjunctive clauses (typically by the subordinator *että* in Finnish and *et* in Estonian, meaning ‘that’ or ‘so that’) and connective adverbs do not typically form a syntactic structure that would enable an interpretation as an argument. Also, there are certain semantic relations (conditional, final, disjunctive) expressed by conjunctions, but not by connective adverbs; vice versa, connective adverbs express relations that conjunctions typically do not, as e.g. restriction (*yet, however*). Connectives are an open class, typically including certain particles, adverbs, or adpositions. (The Comprehensive Finnish Grammar (ISK) § 820, 471; see also Ahlman 1933.)

Characteristic to causative connectives is the ability of the poles of causation to display a two-way order: the cause and result may occur either in the cause-result order or the other way around, result-cause. These relationships are in literature also referred to as forward and backward causativity (or causality<sup>2</sup>, see e.g. Sanders & Spooren 2015; Blochowiak 2017). An example on the forward causation is the connective *so* (*Tom was afraid, so he ran*), and backward causation is *because* (*Tom ran because he was afraid*). The direction of causation regarding the segments it combines is in the Tienert model of conceptual semantics analyzed via the causative subordination types LEAD TO and BECAUSE OF (Paulsen 2011a–b; Nikanne 2018a; Paulsen & Nikanne 2019; see Section 2.1).

<sup>2</sup>In this study, the terms *causativity* and *causation* are used to refer to the cause-result-relationships in language.
Connectives also belong to the markers of the clause linkage type in terms of coordination and subordination. The ability of the clause including a connective to shift the (linear) order appears to be a factor affecting the clause linkage type. A difference between subordinating and coordinating connectives appears for instance in the linear order in which two parts of the sentence are able to appear: the subordinating segment can both precede and follow the main clause whereas the coordinating connectives can only introduce segments after the main clause. (Pit 2003: 15–17.)

Another order-related phenomenon is naturally word order. Connectives raise several questions in connection to word order, regarding e.g. the prototypical position of a connective in the sentence. How is the connective placed in the clause, at the beginning, at the middle or at the end? What is the information status of the connective element?

In the analysis of this study, I will examine the behavior of Estonian connective adverb, seeläbi ‘through that’, and its combinations with the conjunction et ‘that, so that, in order to’ from the point of view of three kinds of orders: i) the order of causation in the sentence involving a matrix and a subordinate clause, ii) the clause linkage order, i.e. the ability of the subordinating clause to be placed before and after the matrix clause, and iii) the placement of these connectives regarding the word order in the clause these connectives occur in.

The analysis is based on the Tiernet model of conceptual semantics (for a comprehensive overview, see Nikanne 2018a), a theory that aims for an explicit description of the regularities and exceptions of linguistic subsystems and the linking rules between these systems. Connectives express different kinds of semantic relations between the matrix clause and the subordinate clause. The particular relation is specified in the lexical entry of the connective by fragments of the micro-modular network (see Nikanne 2018a: 136–138, 211). In this study of complex clauses, I will (mostly) concentrate on finite clauses, leaving out the infinite and nominalized sentences the connective adverbs also occur in. The examples analyzed in this study are taken from the Estonian National Corpus 2017 or The Balanced Corpus of Estonian; in some cases, the examples are presented in somewhat modified version, to concentrate on the relevant parts of sentences.

The article is organized as follows: the theoretical and methodological background is presented in Section 2. Section 3 addresses the order of causation and the clause linkage order of the connective seeläbi ‘through that, thereby’. Section 4 is devoted to the word order tier and its relationship with the information tier and morphology. Conclusions are drawn in Section 5.

2 The Tiernet model

2.1 Causation in Tiernet model

Within linguistics, the notion of causation is often explained as a connection between two events, the causing event and the caused event (Shibatani 1976, Dowty 1979, Foley and van Valin 1984). Neeleman and van de Koot (2012) argue against the assumption of a causing event as the crucial aspect in the syntactic or the lexical semantic representation of causative verbs,
operating as an alternative with the notions of a resultant state and a crucial contributory factor conditioning that state. The definition of causation in this study distinguishes the two poles, cause and result: a causal relation occurs between two situations (events or states) or between a causer and a situation if the occurrence of one situation, the cause, is leading to the occurrence of another situation, the result. The occurrence of the resulting situation thus depends on the appearance of cause.

Causation is one of the central research objects within the framework of conceptual semantics (Jackendoff 1983, 1990, 1997, 2002, 2007, 2010) and the micro-modular Tiernet model of conceptual semantics (Nikanne 1990, 1995, 1997a–b, 2005, 2006, 2008, 2018a; Paulsen 2011a–b; Petrova 2011; Paulsen and Nikanne 2019). Conceptual semantics is a cognitively oriented theory of language system, aiming for an explicit formal description of linguistic (sub)systems and the linking relations between them. In conceptual semantics, the conceptual structure is divided into several tiers, i.e. subsystems that have their own primitives and are linked to each other (Jackendoff 1983, 1990; Nikanne 1990). Nikanne (1990 and later) argues for the favor of direct linking of tiers, instead of assuming representations like phonology, syntax and semantics. These tiers are seen as micro-modules that form a network of primary modules (modules with their own representations and well-formedness principles, basically fragments of phonological, syntactic and conceptual structures) and symbolic modules (linking devices without primitives of their own, as lexicon, morphology and constructions).

Nikanne (2018: 23–27) describes the organization of the micro-modular network and presents a figure (ibid. 27) over primary and symbolic micro-modules in Finnish grammar. The figure does not originally include the CS-tier, the constructional causation tier (about a description of this tier, see below) – a central micro-module in the present study – therefore I have added this module to Figure 1. I assume for the time being that the linking and fundamental nature of this module as well as the overall network do not essentially differ from those of Estonian grammar, a relatively near cognate language to Finnish. I suggest that the CS-tier is linked to the temporal tier, constructions, and morphology.
Figure 1. The network of primary and symbolic micro-modules in Finnish grammar (Nikanne 2018a: 27). The dashed lines mark the linking relations that have at least one end in a symbolic module.

Several conceptual micro-modules are involved in formation of the causative meaning. The subsystems of conceptual structure contributing to causative reading are the following:

- Event structure or thematic tier (a cluster of primary modules, consisting of the f-chain, argument tier and conceptual categories; the roles Causer, Theme, Location, Recipient etc.)
- Semantic fields (expressing the cognitive background of the event)
- Action tier (act-chain; activity and dominance, the roles Actor and Undergoer with the subroles Beneficiary and Malefactive)
- Temporal structure (T-tier, the primitives Point of time and Region of time)
- Thematic features (volitionality, control, consciousness, responsibility)
The causative structures examined in this study are constructional complexes consisting of a matrix sentence and a subordinate structure connected to it. In conceptual semantics, the correspondence between causal and temporal relationships is not assumed to be 1:1, and causation is studied separately from the temporal flow. To do that, we need to separate the situations we want to relate to each other. In Nikanne (1997a: 344) this problem is solved by assuming a separate tier for the analysis of temporal relations, the constructional T-tier or CT-tier, which relates the temporal tier of a core sentence to the subordinate structure. The T-tier of the core sentence and the T-tier of the adjunct structure are separately linked to the CT-tier. The CT-tier itself has no exact structure; it is seen as a schematic notion (a). It is characterized by correspondence to a linear time course that can be divided as follows: the beginning part of the shared T-tier describing the earlier time sequence and the final part of the latter time sequence. If the CT-tier is divided, the abbreviation CT1 stands for the chronologically earlier part of CT and CT2 stands for the chronologically latter part of CT (b) (see Nikanne 1997a: 344–345.):

a. Unitary CT-tier

CT

b. Divided CT-tier

CT1 | CT2

Paulsen’s (2011a: 212–223) study of constructional complexes suggests that the temporal and causative structures do not necessarily correlate with each other chronologically (cf. e.g. example 2b below). Separation of the parts of the constructional tier makes it possible to specify also the parties of the causative situation as well as the course of causation. In the analysis of the causative connective seeläbi, I will adopt the causative subordinate operators proposed in Paulsen (2011a: 214; see also Paulsen 2011b; Nikanne 2018a; Paulsen & Nikanne 2019):

(1) CS↑ the adjunct structure causes the situation in the matrix sentence (BECAUSE OF)
    CS↓ the matrix sentence causes the adjunct’s situation (LEAD TO)

The causal operators presented in (1) reflect the two possible directions of subordinate causation and the characteristics of causative subordination: CS↑ describes a situation where the subordinate structure is the reason for the situation expressed by the matrix structure (cf. 2a); CS↓ stands for the situation where the subordinate structure is a result of the event expressed in the matrix sentence (as in 2b). Basically, reason is defined as one basic type of
causative subordination and effect as another type\(^3\). The constructional causation is hence in this study termed the CS-tier.

\[(2)\]
\[\text{a. The flight was late \{because of the storm\}. CS}↑\]
\[\text{b. I took the taxi \{to catch the flight\}. CS}↓\]

The CS-notations basically reflect the order of causation as language may express it; the logical order of causation is a fast (asymmetric) relationship in the sense that the result follows a cause. As we will see in the analysis below (see section 3), these operators are also useful in the description of causative relations in cases the clause-linkage type has both coordinative and subordinative features.

2.2 Information structure tier and word order tier. Finnish vs Estonian

Word order in the Tiernet model is part of the micro-modular network, analyzed as a separate tier. Nikanne (2018a–b) suggests a simple linear word order system linked to two levels: information structure and morphology\(^4\). The linear order is based on the asymmetric relation between two elements (0 precedes 1, but 1 does not precede 0). The information structure forms a tier of its own, consisting of three functions: TOPIC, FOCUS1 (the contrastive focus or emphasizing focus), and FOCUS2 (focus without strong emphasis), which can select parts of the situation structure (Nikanne 2018a: 232–235). While word order and information structure are tightly connected in languages like Estonian and Finnish, the constructional causation tier is not directly linked to these tiers.

In case of Finnish, the linking to the functional heads corresponds to the structure of the Finnish finite sentence proposed by Holmberg, Nikanne, Oraviita, Reime and Trosterud (1993) and developed further by Holmberg and Nikanne (1994, 2001, 2002, 2008) – the position 0 corresponds to Spec(CP), linked to conjunctions or question words; 1 corresponds to Complementizer, needed for an expletive in certain structures; 2 is linked to Spec(AgrSP), the subject-verb agreement phrase, and 3 to AgrS or subject agreement (person). Nikanne (2018a: 233) proposes a linking system of the information tier, word order tier and the finite sentence morphology tier for Finnish as depicted in Figure 2:

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\(^3\) This division can be compared to the analysis of the Estonian causative adverbial clauses (Plado 2008, 2013) distinguishing two basic types of causal clauses: causal (content and explanatory clauses) and reason clauses (epistemic and conversational clauses).

\(^4\) The model leaves out the syntactic level, assuming that subjecthood or objecthood cannot be derived from the syntactic constituent structure – in Finnish, and also in Estonian, the predicate verb of a finite sentence agrees with the (nominative) subject, no matter where the subject is located (Nikanne 2018a: 145–175; 220).
Following Vilkuna (1989), the initial positions of the word order tier are assumed to be linked to FOCUS1 and TOPIC in Finnish. These information tier functions have fixed links to the word order tier: FOCUS1 always selects the word order position 0 and TOPIC always selects position 2. On the finite sentence morphology level, the category AgrS selects word order position 3 (following Holmberg’s and Nikanne’s theory of the Finnish finite sentence). Position 1 is provided for the expletive in certain structures. Positions 4 and forwards are available for the morphological categories according to the hierarchy of finite sentence morphological categories: AgrS > T > Ptc > Pass. (Nikanne 2018: 221, 233–234.)

The Estonian word order is, similarly to Finnish, affected rather by pragmatic properties than syntactic factors (see Lindström 2005: 185, 2006), and thus, the word order tier and information tier must be linked. The main principle behind the Estonian word order is topicalization, which Tael (1988: 28) sees as a process creating independent word order structures rather than transformations of a salient basic word order (which in Estonian is difficult to identify). It cannot be presumed, however, that the word order patterns in the two genetically close languages, Finnish and Estonian, correspond: according to the comparative study of Tael (1988), the principle of free word order assumed to characterize both Finnish and Estonian, is manifested even more distinctly in Estonian. In addition, the lack of a generally characteristic word order is particularly evident in Estonian subordinate clauses. Distribution of different word order types is the most spread in case of adverbial subordinate clauses. Hereby, the most frequent pattern of adverbial subordinate clauses both in Estonian and Finnish is SVX⁵, however, clearly more salient in Finnish than in Estonian. (Ibid. 24–27.)

There is, however, a salient pattern in Estonian that can be considered as a word order constraint, namely the V2-rule or “verb comes second” (Tael 1988: 40; Huumo 2002: 502); the most frequent word orders in written non-literary Estonian are according to Tael’s (ibid. 6) study SVX (25%) and XVS (24%). As mentioned above, the adverbial clauses in Estonian display a particularly diverse word order – in Tael’s study, 50% of the adverbial subordinate clauses

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⁵ There is a word order type missing in both Estonian and Finnish adverbial subordinate clauses according to Tael’s (1988) study – the VSX type. The statistics of this analysis is based on the data consisting of 22 non-literary texts with altogether 3000 sentences (ibid. 4).
clauses have V2 word order (SVX, XVS, XVX, XV*S, XVSX) and 11% verb-last order (SXV, XSV); 20% are short patterns that can be identified both as V2 and verb-last position at the same time, i.e. XV and SV. The verb-first type is represented in adverbial clauses most frequently in respect to other subordinate clause types – altogether 19% (VX, VS). (Ibid. 1988: 25.)

Regarding the role of expletives (placeholders associated with the syntactic position of the subject), we can say that there are no (fully) grammatical articles distinguishing between definite and indefinite referents either in Finnish or in Estonian, but in both languages, there are a few pronouns that can be used as empty subjects. Due to rich inflectional case systems and subject-verb agreement, both languages allow zero reference (i.e. absence of an overt argument in a position where it is expected to be) but are not analyzed as full pro-drop languages (Hint et al. 2020: 45). As Finnish, Estonian does not have a definite article but makes use of determinative and personal pronouns as definiteness markers. In proverbs, in particular, the Finnish se ‘it’ can be used as a pseudoarticle, i.e. in cases where the NP is not definitive. Nikanne (2018: 248) suggests that the function of the pseudoarticle is to express that the sentence is a generalization. In Estonian, the pronouns see ‘this, that’ and ta ‘he; it’ may occur in a similar function, indicating that the word before it has a strong focus (FOCUS1). Consider the proverb with see in (3) and an example with ta from the corpus in (4):

(3)  Ei see kelk joose jaanipäävase jää peal
not this sledge run Midsummer.Dated ice on
lit = ‘This sledge does not slide on the Midsummer Day ice’, meaning ‘I do not believe your lie’

(4)  Tõsi ta on, see on pääke.
True he/it is, this is sun
‘True story, this is the sun.’

In addition, the short form of the second person pronoun sa ‘you’ may have a generalizing function in spoken language. It can be used as an expletive that marks an empty position:

(5)  Mis sa ikka külma-s sauna-s istu-d.
what you after all cold-INE sauna-INE sit-2SG
‘There is no sense in sitting in a cold sauna.’

(6)  Mis/mida sa hing veel taha-d.
what NOM/PART you soul else want-2SG
‘What more could one wish.’

6 The asterix * after a constituent stands for its obligatory position in the particular pattern – every other position of the constituent in case of the particular topic would turn the sentence ungrammatical (at least in stylistically neutral text) (see Tael 1988: 5).
7 The examples of expletives are the semantically empty it and there in English (it is raining today; there are cats everywhere you look).
8 In Estonian, the overt form ta is regarded as the default way of referring to the most salient entities in discourse (Pajušalu 2009).
9 This proverb can be found in the Database of Estonian Phrases at the address: http://www.folklore.ee/justkui/sonastik/index.php?f=2&f1=7&f2=2&m=21580&id=21670.
Hence, I assume at least so far that the word order and information structure of Estonian can be linked as in Figure 2 above. As in Finnish, the FOCUS2 (the non-contrastive focus) is usually placed at the end of the sentence (as the unpredictable, new information) or at the middle of the sentence accompanied by stress, focusing particles or pronouns. The contrasting element (FOCUS1) is typically placed at the beginning of the sentence. (Lindström 2017: 546.) The possible expletive takes position 1 and TOPIC position 2. Does the AgrS in Estonian have a fixed position? Because of the V2-rule that is dominating in Estonian, I assume that its basic position is bound with the position 3 in the word order line; in the analyses below, we will see how solidly this rule holds for finite subordinate clauses involving the connective adverb seelübi.

2.3 Clause linkage types

The clause linkage types are traditionally opposed between subordination and coordination; however, these classes cannot be seen as clearly separable but rather as gradual, continuum-based phenomena (see e.g. Cristofaro 2003: 22–23, Cosme 2008: 110). According to Pit (2003), there are subordinators among connectives that behave in some respect similarly to the coordinating connectives and hereby the ambiguity of clause linkage types correlates with lower integration level and hence higher independence of the clauses. Such subordinators are e.g. the causative connectives aangeziegen in Dutch, da in German and puisque in French. The difference between subordinating and coordinating connectives appears among other factors in the linear order in which two parts of the sentence may appear: the subordinating segment can both precede and follow the main clause whereas the coordinating connectives can only introduce segments after the main clause. (Pit 2003: 15–17.) In terms of the Tiernet model, the linking type of the linear order where one element precedes another can be specified as follows (see Nikanne 2018a: 30–31):

A - - - - - - - - - B  ‘A precedes B’ in linear order

The prototypical subordinate and prototypical coordinate clausal linking can thus be formalized as in (a) and (b), respectively:

a)  

<table>
<thead>
<tr>
<th>MX</th>
<th>- - - - -</th>
<th>CPL</th>
</tr>
</thead>
</table>

b)

| MX |  - - - - - | CPL |

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3 Clause order and causation order of seeläbi and its combinations with et

Section 3 addresses two kinds of order: the clause linkage type based on the clause order and the causation order of the matrix and subordinate clauses examined by the causative subordination types BECAUSE OF (CS↑) and LEAD TO (CS↓). The analysis is based on the connective seeläbi in three different functions: (i) as a connective adverb, (ii) as a correlative adverb in combination with the subordinate conjunction et ‘that’ (seeläbi, et), and (iii) as a correlative conjunction in the complex connective seeläbi et.

3.1 The connective adverb seeläbi

The connective adverb seeläbi (Eng. ‘through that, for that reason’; Fin. ‘siten, sillä tavalla, sitä kautta’) is a compound word consisting of the pronoun see ‘this, that’ and the adposition läbi ‘through’\(^{10}\). This word is a proadverb, a substituting form for an adverb or other expression (constituents, phrases, clauses, or sentences) with adverbial function (see e.g. Crystal 1997: 310). As autosemantic adverbs, also proadverbs refer to place, time, manner, state, amount, cause, purpose, etc., but in an anaphoric or cataphoric manner. Like other connectives expressing causation or purpose in Estonian, seeläbi has no autosemantic equivalent. (Veismann & Erelt 2017: 421, 425.) Characteristically, seeläbi has an anaphoric relation to a constituent (e.g. to the subject of the clause, as in (7), or to the object, as in (8)), the whole preceding clause (9), or even larger text chunks (see (10)). The connective seeläbi can be placed at the beginning of the subordinate clause but it can also take other positions. The clause beginning with seeläbi may be connected to the main clause by a comma or a (coordinative) conjunction, but it can also function as an independent sentence (7).

(7) Õpihuvi tekkimiseks on tähtis kodutööde mitmekülgsus. Seeläbi harjub õppija vastutusega.
   ‘For generation of learning motivation, the homework versatility is crucial. Through that the learner gets used to take responsibility.

(8) Kolleeg ajab heatahtlikult oma asja ning seeläbi teenib ta teiste lugupidamise. (Web17)
   ‘Amicably, (my) colleague is doing his/her own thing and through that (s)he earns respect from others.’

(9) Jalgrattatee on ehitatud tänavast kõrgemale ja pikema maa sõitmine on seeläbi ebamugav.
   ‘Cycle road is constructed to be higher than the street and cycling a longer distance is uncomfortable through that.’

(10) Kõige suurem asi kogu miljonivöidu juures on see, et poja jaoks on emal rohkem aega: ta ei pea mitmel kohal rahama, et koterit või midagi muud suuremat asja igapäevakutumatust asetada osta. „Ag a mehed kardavad rikkaat naisid!” toob noor naine välja miljonivöidu kõvate külge. „Jah, suhted on seeläbi sattunud.” (aja_EPL)
   ‘The most important thing about the whole jackpot is that the mother now has more time for her son: she does not have to work hard at several jobs, to buy an apartment or something else expensive on the account of the everyday expenses. “But men are afraid of rich women!”’, the

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\(^{10}\) The proadverb seeläbi is a complex connective adverb that forms a pair with the interrogative proadverb misläbi (mis ‘what’ + läbi ‘through’). These words belong to a group of interrogative-connective proadverbs in Estonian (e.g. misjaoks ‘what for’ – seejaoks ‘therefore, for the purpose of’, mispeale ‘upon what’ – seepeale ‘thereupon’; see EKG 1995: 18) that have developed via forced grammaticalization by the example of corresponding German proadverbs (Pärt 2018).
young woman brings up a downside of the jackpot. “Yes, the relationships have suffered through that.”"

When switching the order of the clauses in the examples (7–9), it appears that regarding its clause linkage type, seeläbi bears resemblance with coordinative connectives – as an anaphoric proadverb it can only follow the main clause. The examples (11–13) reflect the examples (7–9) in reverse order:

(11) *Seeläbi harjub õppija vastutusega. Õpikuvi tekkimiseks on tähtis kodutööde mitmekülgus.
‘Through that the learner gets used to take responsibility. In order to the learning motivation to be able to arise, the homework versality is important.’

(12) *Seeläbi teenib kolleeg teiste lugupidamise ning ta ajab heatahtlikult oma asja.
‘Through that he/she earns respect from others and extremely amicably, (my) colleague is doing his/her own thing / minding his/her own business.’

(13) *Pikema maa sõitmine on seeläbi ebamugav ja jalgrattatee on ehitatud tänavast kõrgemale.
‘Cycling a longer distance is uncomfortable through that and cycle road is constructed to be higher than the street.’

As the clause-order-shift test shows, the (semantic) dependence, i.e. the causative linkage between the two clauses disappears, contributing to the incorrectness of these sentences (11–13). Hence, seeläbi is an ambiguous connective regarding its type of clausal linkage, displaying features of both a subordinate and a coordinate structure. Therefore, following Foley and Van Valin’s (1984; see also Van Valin 1993: 68) definition of essentially dependent coordination, the connective adverb seeläbi can be classified as cosubordinate\textsuperscript{11}.

The causative linking order of the connective adverb seeläbi is a more straightforward matter. Regardless of its position in the clause, seeläbi unites two situations: the causing situation (the matrix or main clause) and the caused situation (the subordinate adverbial clause). The causative function of seeläbi is to indicate the result of the matrix situation, as the matrix structure situation leads to the subordinate structure situation. The order of causation hence reflects the LEAD TO causative subordination type, marked with CS↓ in the conceptual structure. Note that in the case of the connective adverb seeläbi, the direction of the causative flow corresponds with the direction of the temporal flow; the non-grammaticality of the clause-shift test (see 11–13) can thus in semantic terms be explained as a violation of these relations.

The essential fragments of the lexical entry of the connective adverb seeläbi can hence be summarized as the information presented in (14). Following the tiernet notation of complex sentences, the matrix and complement sentences are in parentheses and marked with subscript indices MX (= matrix) and CPL (= complement); the indices reflect the linking between the clauses and f-chain (Nikanne 2018: 180).

\textsuperscript{11} Cosubordination is an intermediate category between coordination (both types sharing the feature [– embedded]) and subordination (both sharing the feature [+dependent]) (Foley and Van Valin 1984: 241–243).
3.2 The correlative adverb seeläbi

The connective adverb seeläbi can also be placed in the matrix clause when used as a correlative adverb that indicates the function of the adverbal subordinating clause. This adverb combines with two conjunctives in the Estonian National Corpus 2017: the combination of seeläbi, et has 1,376 results and seeläbi, kui gives 58 results (kui ‘when, if’). The former, seeläbi, et contains the subordinative conjunction et (Eng. ‘so-that, in-order-to’, Fin. ‘että’) and the combination seeläbi, et means roughly ‘for the reason that, through this that’ (Fin. ‘siten, että; sitä kautta, että’). In this constellation, seeläbi introduces an explanatory adverbial clause that indicates the reason for the matrix situation. Hence, in the case of seeläbi, et, the causal relationship between the main clause and the subordinate clause shows the reverse direction in respect to the lexical entry of “bare” seeläbi, and the subordinate structure is the cause of the matrix structure (the BECAUSE OF relation, marked by the operator CS↑). The examples (15–17) illustrate the correlative use of the connective seeläbi.

(15) Saaremaa kannatas tänavu rohkem seeläbi, et kevadised külmad võtsid saagi. (aja_EPL)
‘Saaremaa suffered this year more for the reason that the spring freeze damaged the crop.’

(16) [... ] kuumus teeb südamele kahju seeläbi, et inimene higistab. (aja_soleht)
‘[---] heat harms the heart for the reason that the person sweats.’

(17) Olen kaotanud 15 lisakilo vaid seeläbi, et loobusin igapäevastest saiakestest ja šokolaadidest (web17)
‘I have lost 15 extra kilos just for the reason that I gave up the everyday buns and chocolates’

The complex connective seeläbi, et can both precede and follow the main clause, which is a sign of the subordinate clause type. Consider the examples (18–20) that correspond to the examples (15–17) in reversed order:

(18) Seeläbi, et kevadised külmad võtsid saagi, kannatas Saaremaa tänavu rohkem.
‘For the reason that the spring freeze damaged the crop, Saaremaa suffered this year more.’

(19) Seeläbi, et inimene higistab, teeb kuumus südamele kahju.
‘For the reason that the person sweats, heat harms the heart.’

(20) Vaid seeläbi, et loobusin igapäevastest saiakestest ja šokolaadidest, olen kaotanud 15 lisakilo.
‘Just for the reason that I gave up the everyday buns and chocolates I have lost 15 extra kilos.’

However, in some cases, the compound conjunction seeläbi, et may also yield the LEAD TO causation reading (CS↓) where the matrix situation is the cause of the subordinate clause, consider the example (21). The clause order shift test of this sentence (see 22) shows that the
subordinating segment cannot precede the main clause. Note that the compound conjunction refers to the previous sentence as a whole.

(21)  
\[
\text{Sa ei pea olema kõikide tegevuste, mida te koos ette võtate, spetsialist. Sinu laps näeb seeläbi, et ka lapsesvanem pole eksimatu. (web17)}
\]
‘You don’t need to be the specialist in every activity you take on together. Your kid sees through this that even the parent is not unerring.’

(22)  
\[
\text{*Sa ei pea olema kõikide tegevuste, mida te koos ette võtate, spetsialist. Seeläbi, et ka lapsesvanem pole eksimatu, näeb sinu laps. (22)}
\]
‘*You don’t need to be the specialist in every activity you take on together. Through this that even the parent is not unerring, your kid sees.’

I hypothesize that it is the LEAD TO causation type that induces the cosubordinate features of seeläbi both in the function of a connective and a correlative adverb. I hence analyze the two causation-based interpretations of the correlative adverb seeläbi in a two-part lexical entry: the BECAUSE OF-causation conditioning the subordinate reading of this correlative adverb corresponds to the (23a) and the LEAD TO-causation eliciting the cosubordinate relation is reflected in (23b).

(23a)  
\[
\text{seeläbi Subordinate connective correlative adverb}
\]
\[
(\text{MX } [...-V-AgrS…]_2 (\text{cpl. } \text{seeläbi, et } [\text{…-V-AgrS…}]_3)
\]
\[
[\text{…}]_2
\]
\[
\text{CS↑}_1 \rightarrow [\text{…}]_3
\]

(23b)  
\[
\text{seeläbi Cosubordinate connective correlative adverb}
\]
\[
(\text{MX } [...-V-AgrS…]_2 (\text{cpl. } \text{seeläbi, et } [\text{…-V-AgrS…}]_3)
\]
\[
[\text{…}]_2
\]
\[
\text{CS↓}_1 \rightarrow [\text{…}]_3
\]

3.3 The correlative-conjunction seeläbi et

The correlate word can lose its syntactic and semantic independence when the matrix clause is complete and informative even without the correlate, marked by the movement of the comma before the correlate in the written text\(^\text{12}\). This move raises the relevance of the matrix clause and lifts the focus on the predicate, while the content of the subordinate clause becomes secondary. (Erelt & Metslang 2017: 510.) The connective adverb seeläbi may form a

---

\(^{12}\) When dealing with Internet-texts, one should, of course, be aware of the fact that unconventional punctuation is a specific feature of e-discourse, related to the spontaneous and informal character of these texts. However, the unconventionality (in respect to the norms of written language) does not mean randomness – even in the e-discourse, punctuation may be used as a means to shape and differentiate sections and thus plays a role in the writer’s self-expression (see e.g. Jääskeläinen 2013: 139; 196).
correlative-conjunction (Est. korrelaatsidend) seeläbi et (Eng. ‘so that’; Fin. ‘siten että’) in combination with the conjunction et ‘that’, consider the reading of a correlative adverb in (24), correlative conjunction in (25) and the clause-shift test in (26).

(24) **Treenimisega kasvatad enesekindlust seeläbi, et saavutad parema füüsilise vormi.**
    ‘By training you raise confidence through this, that you achieve a better physical form.’

(25) **Treenimisega kasvatad enesekindlust, seeläbi et saavutad parema füüsilise vormi.**
    ‘By training you raise confidence, so that you achieve a better physical form.’

(26) **Seeläbi et saavutad parema füüsilise vormi, kasvatad treenimisega enesekindlust.**

There are only two cases in corpora that indicate a shift of the connective seeläbi into the constitution of the conjunctive et, marked with a comma\(^{13}\) before the compound conjunctive, consider one of them (see 27) and its version with shifted clause order in (28):

(27) **Nõnda pühitsevad ka ilmikud, seeläbi et nad kõikjal pühalt tegutsemise läbivad, kogu maailma Jumalale (web17, katoliku.ee)**
    ‘So also the seculars sanctify, through this that they follow the sacred activity everywhere, the whole world to the God.’

(28) **Seeläbi et nad kõikjal pühalt tegutsemise läbivad, pühitsevad nõnda ka ilmikud kogu maailma Jumalale.**
    ‘Through this that they follow the sacred activity everywhere, so also the seculars sanctify the whole world to the God.’

The correlative conjunction seeläbi et is a subordinate connective and its causative subordination type is BECAUSE OF, marked by the operator CS↑:

(29) \[
    \begin{array}{c}
    \text{seeläbi et} \\
    \text{Connective subordinate correlative-conjunction} \\
    (\text{MX} \ldots \text{V-Agr} \ldots) \ll (\text{CPL} \text{seeläbi et} \ll \text{V-Agr} \ldots) \ll \\
    \ll [\ldots]_2 \\
    \ll \text{CS}↑ \ll [\ldots]_3
    \end{array}
\]

4 Word order tier and information structure tier of seeläbi

4.1 The connective adverb seeläbi

The connective adverb seeläbi can introduce a cosubordinate clause and occur at its constituent border, linked to the TOPIC, but this connective can also begin an independent clause as the FOCUS1 of the clause. The latter is relatively frequent use of this connective with altogether 2651 occurrences in Estonian National Corpus 2017 of the total of 40 814; for comparison,

---

\(^{13}\) In Estonian NC 2017 corpus, there are, in addition, 13 results of seeläbi et without a comma within or before it; the restructuring step to correlative conjunction has not happened in these examples. The newest ENC-corpus from 2019 includes 20 such examples and 3 correlative conjunction examples.
there are 647 occurrences of seeläbi following a comma and 16 987 results following the coordinative conjunctions ja or ning (both meaning ‘and’). Without a comprehensive quantitative analysis, I would generalize that when the connective adverb seeläbi is placed at the beginning of the clause, the general word order of this clause in syntactic terms tends to be XVS(O) (X=seeläbi). An analysis of the cases where seeläbi is linked to the information tier functions FOCUS1 or TOPIC is given by the examples (30) and (31). I do not analyze here the word order of the matrix clause but only the clause with seeläbi (the cosubordinate clause is underlined).

(30)  
*Karbonaatsed ühendid seovad väävli kipsiks. Seeläbi väheneb keskkonda sattuva vääveldioksidi hulk. (aja_EPL)*  
'Calcareous composites bind the sulphur into gypsum. Through that the amount of sulphur dioxide decreases.'

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<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeläbi vähene-b</td>
<td>through.th</td>
<td>vaäveldioksidi hulk.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(31)  
*Kolleeg ajab heatahtlikult oma asja ning seeläbi teenib ta teiste lugupidamise.*  
'(My) colleague is amicably doing his/her own thing and through that he/she earns respect from others.'

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<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ning and seeläbi teeni-b ta</td>
<td>through.th merit-3SG he/she</td>
<td>teiste lugupidamise others.GEN respect.GEN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The connective adverb seeläbi can also be placed to position 4 and linked to FOCUS2 (focus without strong emphasis). In this case, the AgrS precedes the connective (in syntactic terms, the pattern is SVXO):  

(32)  
*Kolleeg ajab heatahtlikult oma asja ning ta teenib seeläbi teiste lugupidamise.*  
'(My) colleague is amicably doing his/her own thing and through that he/she earns respect from others.'

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ning ta seeläbi teenib</td>
<td>earn-3SG through.th</td>
<td>teiste lugupidamise others’ respect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The connective *seeläbi* even occurs in final position (V(O)X) and it is again selected by the function FOCUS2. The example (33) represents formal language, it is found in the Balanced Corpus of Estonian\(^\text{14}\) from the subcorpus of doctoral dissertations. The example (34), taken from the eTenTen web corpus, illustrates informal language. The forms of the predicate are passive in (33) and infinite 2 (or *da*-infinitive) in (34).

\[\text{(33) } \text{Kaasaegsed suhted etniliste rühmade vahel projitseeritakse kaugesse minevikku ja legitimeeritakse seeläbi. (Doktoritööd)}\]

‘Contemporary relationships between ethnic groups are projected to far past and legitimized through that.’

\[\begin{array}{cccccc}
& 0 & 1 & 2 & 3 & 4 & 5 \\
ja & legitimeeritakse-kse & seeläbi \\
and & legitimize-PASS & through.that \\
\end{array}\]

\[\text{(34) } \text{Teil on võimalik originaalfail juba praegu oma kontolt kustutada ning vabastada rohkem kettaruumi seeläbi. (info.nupsu.ee)}\]

‘It is possible to erase the original fail from your account already now and free more disk space through that’

\[\begin{array}{cccccc}
& 0 & 1 & 2 & 3 & 4 & 5 \\
ning & vabastada-da & rohkem kettaruumi & seeläbi \\
and & free-2INF & more disk.space & through.that \\
\end{array}\]

We can conclude that the connective adverb *seeläbi* can be linked to all information structure functions: FOCUS1, TOPIC and FOCUS2, depending on the placement in the cosubordinate clause.

### 4.2 The correlative adverb *seeläbi*

It is not unusual that connective adverbs occur side by side with conjunctions, specifying the relationship between two clauses. As mentioned in section 3, most frequently, the connective *seeläbi* functions as a correlative connective in combination with the conjunction *et*. In (35), I analyze the word order of the matrix clause and subordinate clause of example 15 (see Section 3.2).

---

\(^{14}\) The Balanced Corpus of Estonian consists of text representing the three main text classes of the written language: newspaper texts, fiction and science texts (size 5 million words).
Saaremaa suffered this year more through this that spring.freeze-PL took crop.GEN ‘Saaremaa suffered this year more for the reason that the spring freeze damaged the crop.’

The connective adverb seeläbi is placed at the end of the matrix clause, linked to FOCUS2 at the information structure; the conjunction et initiates the subordinate clause on position 0. This structure characterizes both the BECAUSE OF and LEAD TO readings of the correlative conjunction seeläbi, et (recall the analysis of causative subordination types in section 3.2).

4.3 The correlative conjunction seeläbi et

As discussed in Section 3.3, the connective seeläbi may slide into the constitution of the conjunction et ‘in order to’. The shift is in written language marked through punctuation, i.e. by a comma before the compound conjunction. As mentioned above, this change occurs when the matrix clause is completed and informative also without the correlate word, and the speaker intends to raise the relevance of the predicate of the matrix clause. When the correlate is moved to the constitution of the subordinate structure, it is assumed to take a non-focused position in the clause (Erelt 2017: 700, 718–719). I analyze here the word order structure of example (27) presented also in Section 3.3 in (36)15:

(36) Nõnda pühitsevad ka ilmikud, seeläbi et nad kõikjal pühalt tegutsemise läbivad, kogu maailma Jumalale. (web17)
‘So also the seculars sanctify, through following the sacred activity everywhere, the whole world to the God.’

As we can see, the superordinate clause beginning with seeläbi et has the predicate verb in its final position. Lindström (2006: 887) argues that an element with a strong focus in the clause-

---

15 In this example, it appears that the element with raised relevance in the main clause is the subject (the FOCUS2), not the predicate. However, as the topic of this study is the placement of seeläbi, I analyze only the subordinate clause.
initial position (in our terms, FOCUS1) keeps the verb in the final position. This supports the analysis of the structure of the word order tier as in (37a): the correlative conjunction *seeläbi et* assigns the position 0, linked to FOCUS1 on the information structure and the AgrS is linked to the position 5 (cf. 37b).

<table>
<thead>
<tr>
<th>FOCUS1</th>
<th>'for the reason that they follow the sacred activity everywhere'</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><em>seeläbi et</em></td>
<td><em>nad</em></td>
</tr>
<tr>
<td>through.this that</td>
<td>they</td>
</tr>
</tbody>
</table>

There are no restrictions on the movement of the verb from the clause-final position to another – when the predicate is in position 3, the word order of this sentence is as in (37b). It is debatable if the correlative conjunction *seeläbi et* has the status of FOCUS1 here – if following the proposal of Erelt (see above), the correlative conjunction has a non-focused position. In that case, position 0 is not linked to FOCUS1 but has an unmarked status on the information tier.

<table>
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<tr>
<th>5 Discussion and conclusion</th>
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</table>

The “Conceptual Semantics’ Small Catechism”, i.e. its methodological guidelines, as stated in Nikanne (2018a: 11–14), has guided this analysis of a versatile linguistic form with several roles on the linguistic scene. The connective adverb *seeläbi* ‘through that’ was approached from the perspective of order in three different perspectives: the order of causation, the clause order, and the word order. The analysis has shown that the micro-modular Tiernet model, striving for a description of both linear and non-linear linking relations, provides a toolkit one can use to capture the system in the orders.

The connective adverb *seeläbi* appears to be a multiplex word that displays a wide range of variation regarding the orders examined in this study. It is able to encode both types of subordinate causation (BECAUSE OF, LEAD TO); it has properties of both types of subordinate causation; it can be placed to initial, medium, or final positions in the clause and it can link to all three information tier functions (FOCUS1, TOPIC, and FOCUS2). According to the three different roles of *seeläbi*, the results of the analysis can be summed up as in Table 1 and the explaining clauses (1–3) below:
Table 1. The causation order, clause linkage type, word order and information tier linking of *seeläbi*

<table>
<thead>
<tr>
<th>Connective proadverb</th>
<th>Causation order</th>
<th>Clause linkage type</th>
<th>Word order</th>
<th>Information tier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LEAD TO</td>
<td>cosubordinate</td>
<td>0, 2, 4, 5</td>
<td>FOCUS1, TOPIC, FOCUS2</td>
</tr>
<tr>
<td>Correlative adverb</td>
<td>BECAUSE OF</td>
<td>subordinate</td>
<td>4, 5</td>
<td>FOCUS2</td>
</tr>
<tr>
<td></td>
<td>LEAD TO</td>
<td>cosubordinate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlative conjunction</td>
<td>BECAUSE OF</td>
<td>subordinate</td>
<td>0</td>
<td>FOCUS1 or non-focused</td>
</tr>
</tbody>
</table>

1) **The connective proadverb** *seeläbi* encodes LEAD TO causation. Its clausal linkage type appears to be cosubordinate, indicating that *seeläbi* is a subordinator that behaves like the coordinating connectives, and the integration degree between the clauses is lower than in the case of a prototypical subordinate or coordinate connective. The connective adverb *seeläbi* can occur in word order positions 0, 2, 4, 5. It is particularly flexible regarding its linking possibilities on the information structure level, being able to map all information structure functions: FOCUS1, TOPIC, and FOCUS2, depending on its placement in the cosubordinate clause.

2) **The correlative adverb** *seeläbi* in combination with the conjunction *et* displays properties of a subordinate as well as a cosubordinate connective and is particularly flexible regarding the causation order – it can encode both BECAUSE OF and LEAD TO causation. The indeterminate nature of causation order types may arise from the intermediate stage between the connective adverb and correlative conjunction (i.e. groups 1 and 3). In the word order tier, *seeläbi* is placed at the end of the matrix clause, linked to FOCUS2 at the information structure, and the conjunction *et* initiates the subordinate clause on position 0.

3) As a component of **the correlative conjunction** *seeläbi et*, *seeläbi* is a subordinate connective according to the clause linkage test and its causative subordination type is BECAUSE OF. This compound conjunction is linked to the FOCUS1 on the information tier level – a reading that is supported, in particular, by the verb-final word order. In case *seeläbi et* is interpreted as a non-focused element, position 0 is not linked to FOCUS1 but has an unmarked status on the information tier. The possibility of Estonian subordinate clauses to have verb-final word order also weakens the AgrS linking to a certain position. These can be seen as exceptions with respect to the assumption of the linking system of Finnish (cf. Nikanne 2018a: 233). Otherwise, the Estonian linking system of word order, information structure, and morphology seems to correspond to the Finnish system, within the limits of this constrained study.

In all, the study of the behavior of *seeläbi* ‘through that’ enabled us to detect certain correlative tendencies between the CS-tier and clause linkage types in particular. Regarding the linking system between the causative subordination and the clause linkage types we can make the
following generalization: the BECAUSE OF-causation is related to the subordinate and the LEAD TO-causation to the cosubordinate clausal type. LEAD TO-causation thus seems to occur in sentences combining clauses with a lower integration and hence higher independence level than BECAUSE OF-causation that encodes clear subordinate relations.

The analysis in this study does not pretend to state fundamental claims (the scope of it should be much wider), but it gives a hint about the possibilities the Tiernet methodology has to offer for the analysis of e.g. causation and word order system. An advantage of the micro-modular approach is that via the specification of the set of modules and the nature of the links between the modules in different languages enables a comparison on a cross-linguistic level. Therefore, a comprehensive comparative study of e.g. Estonian and Finnish word order tier would be an interesting future topic.

**Abbreviations and symbols**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AgrS</td>
<td>subject agreement</td>
</tr>
<tr>
<td>CAUS</td>
<td>causative</td>
</tr>
<tr>
<td>CS↑</td>
<td>adjunct structure causes the situation in the matrix sentence (BECAUSE OF)</td>
</tr>
<tr>
<td>CS↓</td>
<td>matrix sentence causes the adjunct’s situation (LEAD TO)</td>
</tr>
<tr>
<td>CT-tier</td>
<td>constructional T-tier</td>
</tr>
<tr>
<td>ILL</td>
<td>illative</td>
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<tr>
<td>INE</td>
<td>inessive</td>
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<td>MX</td>
<td>matrix sentence</td>
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<td>CPL</td>
<td>complement</td>
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<td>passive</td>
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<td>verb</td>
</tr>
<tr>
<td>X</td>
<td>modifier</td>
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</table>
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Electronic corpora


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