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Relative and absolute irrealis in deeply embedded clauses

1. Introduction

Most Finno-Ugric languages use grammatical mood (e.g., the Finnic conditional or the Mordvin conjunctive mood) to mark subordinate clauses as irrealis; others, like Komi, use a special irrealis particle and combine it with the unmarked “indicative” form of the verb.¹

In some contexts of clausal subordination, the irrealis marking is a mandatory property of the construction, i.e., the subordination construction *requires* the finite predicate of the subordinate clause to be marked as irrealis. In Finnic languages, for example, such constructions express hypothetical and counterfactual conditional clauses, adverbial clauses of purpose, and complement clauses of manipulative predicates (VISK: § 1595, § 1596; Erelt 2017b: 667–755). The obligatoriness of the irrealis marking in these contexts is a sign that the irrealis mood is *grammaticalized* in the clausal subordination system of the language. The phenomenon is best studied in complement clauses. Kehayov (2016) used the notion of ‘complementizer with mood concord’ to account for a subordination strategy in Finnic which consists of a complementizer and the conditional form of the embedded verb. Likewise, discussing clausal complementation in Baltic and Finnic languages, Holvoet

1. The notions of ‘realis’ and ‘irrealis’ are well established as comparative concepts in linguistics. According to the often-quoted definition of Marianne Mithun “[t]he realis portrays situations as actualized, as having occurred or actually occurring, knowable

et al. (2021) noted that the irrealis mood may grammaticalize as a part of the complementation strategy, thus turning into a ‘complementizing mood’.

Example (1) from Estonian demonstrates such complementizing irrealis. We formalize sentences with multiple embedded clauses [C [C₁ [C₂ [...]]]], where C = main clause, C₁ = first-order embedded clause, C₂ = second-order embedded clause, etc. The conditional mood in C₂ of the sentence in (1) cannot be replaced by the indicative or any other form of the verb.² The irrealis mood is licensed in this clause by the verb *soovima* ‘wish’ in C₁, which takes non-factual complement clauses and requires that their verbs are in the conditional mood. As stated above, the conditional is in this case part of the grammar of subordination.

- (1) [_{C=}*Tahan vaid öelda,* [_{C₁=}*et Tanel on olnud*
 want:PRS.1SG only say:INF that Tanel be.PRS.3SG be:APP
näitlejana väga tubli ja et soovin,
 actor:ESS very capable and that wish:PRS.1SG
 [_{C₂=}*et oleksin (*olen) sama musikaalne,*
 that be:COND:1SG be:IND.PRS.1SG as musically_gifted
kui on tema andekas näitlejana]]]
 as be.PRS.3SG he gifted actor:ESS (ENC 2019)
 ‘I just want to say that Tanel has been very good as an actor, and I wish
 I were as musically gifted as he is talented as an actor.’

Nonetheless, there are environments in which the irrealis marking in the subordinate clause can be exchanged for a realis marking, whereby the sentence remains intact. In this short explorative study, we focus on such examples, as they are less studied but more challenging from a functional point of view. Appreciating the expertise of our jubilarian in Finnic and Mordvin, we use data from Estonian and Moksha Mordvin, although we assume that any Uralic

through direct perception. The irrealis portrays situations as purely within the realm of thought, knowable only through imagination.” (Mithun 1999: 173; see also Kehayov 2017: 49–50 for discussion and further references). Grammatical irrealis moods in Uralic languages include the conditional, the conjunctive or subjunctive (depending on the label used by descriptive linguists), as well as the optative, the jussive, the potential, the desiderative, etc., whereas realis is typically expressed by the unmarked indicative mood.

2. We present clause boundaries in examples with square brackets and the forms analyzed in bold face. The alternative form is always in parentheses after the attested form.

language would serve our point. The study is based on a sample of sentences with deeply embedded clauses from these two languages. We found in these data relative clauses, in which realis and irrealis marking are interchangeable; see example (3) from Estonian, where both the conditional and the indicative are possible.

What motivates the use of the conditional (resp. conjunctive) mood or, conversely, the use of the indicative in such environments? For one thing, the choice between the realis and irrealis mood here is not encoded in grammar, because we do not have a fixed construction with an obligatory form. Accepting that the irrealis mood is not grammatically conditioned, we are left with the possibility that it is semantically or pragmatically motivated. In all respective examples, the state-of-affairs (SoAs) expressed in the discussed clause is non-factual (i.e., irreal). The contents of higher clauses evoke an expression of a SoAs in this clause, which does not correspond to the facts of the actual world. If the clause contents are already irreal, what motivates the choice between the realis and irrealis mood in it? We present a binary distinction, which seems to account for the choice of mood in such relative clauses. This distinction is worth testing in the future against a larger amount of data and among various types of subordinate clauses and subordination constructions.

Alexander Letuchiy (2020; 2021: 534–538) accounts for variation, as in (3), in terms of ‘absolute vs. relative modality’, drawing parallels with the distinction between absolute and relative time reference. In finite complement clauses of utterance verbs, for example, English uses absolute time reference, while Estonian uses relative time reference. The past tense form of the subordinate clause in (2a) expresses time reference relative to the moment of speaking. This reference is absolute: ‘past from now’. In (2b), on the other hand, the present tense form of the subordinate clause conveys reference to another point in time, which in this case is the time at which the SoAs of the main clause occurred (see Erelt 2017a: 129–130).

(2) a. *He said that he was living in London.*

- b. *Ta ütles, et elab Londonis.*
 s/he.NOM say:PST.3SG that live:PRS.3SG London:INE
 ‘She/he said that she/he was living in London.’

Building on the analogy with tense, Letuchiy (2020; 2021) states that a modal form is interpreted absolutely when it denotes the reality status of the situation compared to the speech act, and relatively when it denotes the reality status of the situation compared to another event described in the sentence.

We illustrate this with a constructed sentence from Estonian, and then proceed with attested corpus examples. Just like (1) above, example (3) is a tri-clausal sentence with two successively embedded clauses. As already noted, here both the conditional and the indicative mood are possible in the deepest clause.

- (3) [_{C=}*Ma tahaksin,* [_{C1=}*et juhtuks midagi,*
 I want:COND:1SG that happen:COND.3SG something
 [_{C2=}*mis teda rõõmustaks / rõõmustab*]].
 which s/he:PART cheer:COND.3SG cheer.IND:3SG
 ‘I wish something happened that would cheer her/him up.’

The deepest clause in (3) is a restrictive relative clause, which specifies an element of the reality referred to by *something* in the superordinate clause. The SoAs described in C2 is part of the situation described in C1, which is already unreal, as induced by *tahaksin* (literally ‘I would want’) in the ultimate main clause. In other words, the contents of the second and the third clause are equally (ir)real. They belong to the same imagined world, and in fact describe the same SoAs. Therefore, there could not be a world in which one of them is real and the other unreal.

With the use of the indicative form *rõõmustab* in (3), the reality status of the clausal contents is estimated relative to the reality status of the superordinate clause. The indicative is the semantically neutral mood, which conveys that if the event of C1 occurs in the world, the contents of C2 are also occurring; if the desired *something* happens, the event of someone cheering up will occur; the two events are equally likely. The conditional *rõõmustaks*, however, cannot be interpreted relatively. The conditional as irrealis mood does not indicate in C2 that the cheering up is less real than the SoAs of C1. It indicates that the event of cheering up is unreal compared to some other world and the states of affairs in it. This is not the world of C1 because the reality status of C1 is the same as the status of C2: the contents of C1 and C2 are real under the same conditions. The conditional mood in C2 seems to encode the relationship between the reality of the SoAs in this clause and the speaker’s own reality (in her/his actual world). By using the conditional mood, the speaker expresses that the event of the third person cheering up is not real from her/his point of view. In this case, based on the analogy with absolute time reference, Letuchiy speaks of absolute modality.

2. Relative and absolute irrealis in Estonian and Moksha

Modality is a very broad semantic domain. Considering that Letuchiy does not deal with (absolute and relative) ability or deontic force, but with assessment of the reality of a situation relative to another situation, we will instead speak of absolute and relative (ir)realis.

We consider ‘less real than *y*’ as a gloss of the irrealis mood (called conditional, conjunctive, or other), where *y* is either the SoAs described in the superordinate clause or the SoAs the speaker is involved with (i.e., the situation in which she/he is in). Definitions:

Absolute (ir)realis: the formal coding of the reality status of a clause is motivated by the relationship between the reality of the depicted situation and the speaker’s own reality.

Relative (ir)realis: the formal coding of the reality status of a clause is motivated by the relationship between the reality of the depicted situation and the reality of a situation depicted in a higher subordinate clause.

In this study, we focus on *absolute and relative irrealis*, not on absolute and relative realis. In other words, we focus on clauses expressing SoAs which are unreal in relation to another SoAs (including the SoAs of the speaker), not on clauses expressing SoAs which are real in relation to another SoAs.

2.1. Data and methods

Although this approach is inspired by the analogy with time reference, there is a crucial difference between modality and time reference. While the tense of the ultimate main clause can refer to a moment of time different from the moment of speech, the modality of the main clause is always the modality of the speaker and reflects the situation in which she/he is in. The illocutionary force, the factuality, and (ir)realis status of the main clause come from the speaker – they always reflect the speaker’s point of view, her condition and attitudes. In the sentence *John knows that I am innocent*, the expression of knowing is asserted by the speaker, although the speaker herself/himself might know that she/he is not innocent. The speaker is the one who empowers her/his utterance with illocutionary force and an assessment of the probability or reality of its contents.

The fact that the modality of the ultimate main clause coincides with the modality of the speaker means that relative and absolute irrealis can only be distinguished in sentences with at least second-order embedded clauses, i.e., in sentences, which in addition to C1 have at least a C2 (but possibly also deeper clauses). Therefore, we looked in the corpora only for sentences

containing deeply embedded clauses. We identified ‘relative irrealis’ in C2 when the reality status of the SoAs of the clause was assessed in relation to the reality status of the SoAs in C1, and absolute irrealis when the reality status of the SoAs of the clause was assessed in relation to C, which reflects the reality of the speaker.

We searched for sentences whose second-order embedded clauses were grammatically marked as irrealis (by the conditional or conjunctive mood), but in which the irrealis marking could be replaced by an indicative form. We posed no restrictions as to the marking of the predicate of C1. It could be either marked as irrealis (by the conditional/conjunctive) or as realis (by the indicative); we will discuss both cases, beginning with the irrealis-marked C1, which seems to be more common.

The Moksha sentences containing at least second-order embedded clauses were extracted from the Corpus of Contemporary Literary Moksha (Arkhangelskiy 2019), and the respective Estonian sentences from the balanced subcorpus of the Estonian National Corpus (ENC 2019). We extracted 337 Estonian sentences containing a total of 444 deeply embedded clauses, and 210 Moksha sentences containing 241 deeply embedded clauses. Moksha is richer in grammatical moods than Estonian, but this difference is irrelevant for our study, as we focus on the variation between the indicative and the irrealis mood in subordinate clauses. The irrealis mood in Estonian subordinate clauses is the conditional, and in Moksha the conjunctive; the realis mood is in both languages the unmarked indicative.

These samples allow for a first approximation of the phenomenon, but not more. There were very few unequivocal examples of the distinction between absolute and relative irrealis in our data, all of them in relative clauses, and we will discuss each of them. Due to the small size of the samples, we cannot say if the phenomenon is indeed restricted to relative clauses or if it also occurs elsewhere.

2.2. Analysis

The sentence in (4) from Moksha press material provides another example of the distinction between relative and absolute irrealis. C1 is marked as irrealis by the conjunctive mood. The conjunctive in C2 does not indicate that the SoAs in this clause is less real than the SoAs in C1. C1 and C2 are both unreal in the speaker’s world and the chances that they are obtained are equal: if the criminal is sent to Russia, investigations certainly will be opened. Thus, the irrealis marking (i.e., the conjunctive) in C2 is not motivated by the reality status of the SoAs in the immediate higher clause but is directly assigned by

the speaker. Exchanging the conjunctive for the indicative in C2 instantiates relative irrealis; the indicative marks that the reality status of C2 is the same as the reality status of C1.

- (4) [_{C1=}*Rasijän pravít'elstvaš vešš,* [_{C1=}*štoba*
Russian government:DEF.NOM request:PST1.3SG that:IRR
t'ä band'it' uskäl'áz Rasijäv,
this bandit:DEF.ACC send:CONJ:S3PL>O3SG Russia:LAT
[_{C2=}*kosa ušädäl'xt' (ušädijxt') soñ ravža*
where begin:CONJ:3PL begin:IND.PRS.3PL he:GEN black
t'evñänzän kořas sletstvijä, a šäl'dä
deed:POSS.3SG.PL:GEN for investigations and then
sud'andaláz (sud'andasaz')].
convict:CONJ:S3PL>O3SG convict:IND.PRS:S3PL>S3SG
(Arkhangelskiy 2019)³

'The Russian government insisted that the bandit should be sent to Russia, where court investigations will be opened for his miserable deeds, and he would be convicted.'

Note that the conjunctive mood in C1 of (4) demonstrates the grammaticalized use of irrealis. This conjunctive form cannot be substituted by any other form of the verb; in Moksha, the verb 'request', which introduces non-factual complements, requires a special irrealis complementizer (*štoba*), which in turn is compatible only with the conjunctive form of the subordinate verb.

In sentence (4), the verb in both C1 and C2 is in the conjunctive mood. (5) is a similar example from the Estonian corpus, where both clauses are in the conditional. The conditional form in C2 does not denote that the SoAs in this clause is less real than the contents of C1; both belong to the same unreal world, and thus to the same reality scheme. Instead, the irrealis mood in C2 must be motivated by the negative propositional attitude of the speaker ('I don't believe') expressed in the ultimate main clause. Therefore, the conditional in C2 instantiates absolute irrealis. The indicative, which is also grammatical in this context, instantiates relative irrealis. It is semantically unmarked with respect to the (ir)realis distinction, and thus it simply refers to C1 as a reference point for estimating the reality status of C2; the status of the SoAs of C1 is 'unreal' and so is the status of the SoAs expressed by C2. The latter does not need to be additionally marked as irrealis.

3. Moksha examples are presented in Finno-Ugric transcription.

- (5) [_{C=Ei} *usu*, [_{C1=et} *rumalad* *produktid*
 NEG believe.CNG that stupid:NOM.PL product:NOM.PL
võiksid evida midagi, [_{C2=mis}
 can:COND:3PL have:INF anything which.NOM
sarnaneks (sarnaneb) teadvusele]]]!
 resemble:COND.3SG resemble:IND.3SG consciousness:ALL
 (ENC 2019)
 ‘I do not believe that the stupid products could possess anything that
 would resemble consciousness!’

In (6), from Moksha, C1 contains an expression of possibility (*možna*) of an activity conveyed by an infinitive. The conjunctive form *uləl* does not indicate that C2 is “more unreal” than the SoAs expressed in C1. The situation expressed in C1 is already unreal because it refers to the future. The conjunctive simply indicates that the SoAs expressed in C2 is unreal from the perspective of the speaker, though strongly desired by her. The irrealis meaning is thus directly assigned from the speech act and is absolute. The indicative *ulī*, by contrast, would convey irrealis relative to the reality of the SoAs in C1. The SoAs of C1 and C2 are part of the same imagined world, and they would be real in the same circumstances. The neutral indicative in C2 means ‘as real as the situation in C1’.

- (6) [_{C=Tijənd'sašk} *šembət*, [_{C1=mežt}
 do:PRS.SIPL>O3SG everything:DEF.SG.GEN what:DEF.GEN
vel'dä možna čebärsta jotafñams gəsdarstvennai
 with possible(ADV) well carry_out:INF state
poli'tikat, [_{C2=kona} *uləl* (*ulī*)
 policy:DEF.SG.GEN which be:CONJ.3SG be:IND.PRS.3SG
šarftf finno-ugorskai narot'ňń
 turn:PST.PTCP Finno-Ugric people:PL.DEF:GEN
ärəkləftəmasnənd'i, käl'snən,
 revival:POSS.3PL.SG:DAT language:POSS.3PL.PL:GEN
kojsnən-abučäsnən,
 custom:POSS.3PL.PL:GEN-habit:POSS.3PL.PL:GEN
kulturasnən vanftəmasnənd'i]]].
 culture:POSS.3PL.PL:GEN preservation:POSS.3PL.SG:DAT
 (Arkhangelskiy 2019)
 ‘We do everything to be able to carry out a good public policy, which
 would be oriented towards the revival of Finno-Ugric people, towards
 the preservation of their languages, customs, and cultures.’

Thus far, we have discussed examples in which the verb of the first-order subordinate clause is in the grammatical irrealis mood or is otherwise marked as irrealis, as in (6). We now turn to cases in which the verb of C1 is in the indicative mood. In (7), from Estonian, C1 is in the indicative and C2 in the conditional mood. It is obvious here that the reference point for the reality assessment of the SoAs in C2 is not the contents of C1; the SoAs of C2 is not less real than the SoAs of C1, so that it should be marked by the conditional mood. Instead, the reference point for the reality assessment of C2 is the hope (the optative illocution) expressed by the speaker in the ultimate main clause. Accordingly, the irrealis interpretation of the SoAs in C2 is absolute. As the SoAs of C1 and C2 describe the same hypothetical reality, the relative irrealis can be marked by the indicative in C2.

- (7) [_{C=}*Loodan väga*, [_{C1=}*et loomise korral*
hope:PRS.1SG very_much that founding.GEN in_case
saab sellest büroost asutus,
get:IND.PRS.3SG this:ELA office:ELA agency.NOM
[_{C2=}*mis tegeleks (tegeleb) terve*
which.NOM deal:COND.3SG deal:IND.PRS.3SG entire
Eesti rahvastikuprobleemiga]].
Estonia population_problem:SG.COM (ENC 2019)
'I hope very much that in case the office is established, it will turn into
an agency, which would deal (deals) with the population problems of
all of Estonia.

In most of the examples presented so far (see 3, 5–7), the deepest clause with irrealis mood is a restrictive relative clause with a non-specific (non-referential) head noun in the superordinate clause. Indeed, most of the sentences in which both the irrealis mood and the indicative are possible in C2 are of this type, but there are also examples like (4) above with a non-restrictive relative clause and a specific (referential) head noun.⁴ Another example is (8) from Estonian. The SoAs described in the non-finite clause 'develop a child-friendly rehabilitation system' is not real, as it is an object of the volition verb in the main clause. The SoAs described in C2 is just as unreal as the SoAs of C1 and, therefore, the irrealis marking in C2 (the conditional) must be motivated

4. This matches Pajusalu & Pajusalu's (2010) observation that the Estonian conditional mood typically occurs in restrictive relative clauses; in their data, clauses modifying a non-specific head noun comprise $\frac{3}{4}$ of the relative clauses in which the verb is in the conditional mood.

elsewhere in the semantic structure. Here too, the SoAs of C₂ is irreal in relation to the speaker's SoAs, which motivates the irrealis mood, and the interpretation is absolute. The indicative in C₂, on the other hand, indicates that the SoAs of C₂ has the same status in relation to the actual world as the SoAs of C₁, in which case we have a relative irrealis.

- (8) [_{C=}*Tahame* [_{C₁=}*välja töötada lapsesõbraliku*
 want:IND.PRS.1PL out work:INF child-friendly.GEN
rehabilitatsioonisüsteemi, [_{C₂=}*kus saaksid abi*
 rehabilitation_system.GEN where get:COND.3PL help
(saavad abi) nii lapsed kui vanemad]]]].
 get:IND.PRS.3PL help so child:NOM.PL as parent:NOM.PL
 (ENC 2019)

'We want to develop a child-friendly rehabilitation system, in which both children and parents would get help.'

3. Conclusions

We studied the variation of the form of the predicate of deeply embedded clauses in terms of the distinction between 'absolute irrealis' and 'relative irrealis'. We identified absolute irrealis as a relation between the reality status of the state-of-affairs of a deeply embedded clause and the actual world in which the utterance is produced (and the respective speech act committed). By contrast, relative irrealis is a relation between the reality status of the state-of-affairs of a deeply embedded clause and its immediate superordinate clause. This notional distinction provides a tool for studying irrealis in second-order embedded clauses, in which the irrealis mood does not contribute to the clause-combining construction but is semantically (or pragmatically) motivated.

Estonian and Moksha Mordvin do not seem to differ in their preference for absolute or relative irrealis in deep clausal embeddings. In both languages, we attested the phenomenon in relative clauses, which as a rule have the same reality status as their main clauses. A more thorough study should determine whether and which other types of clauses exhibit the phenomenon.

In relative clauses, the phenomenon seems rather independent from the structure of the higher clauses. The distinction between absolute and relative irrealis was attested in relative C₂s, when either or both C and C₁ are in the grammatical irrealis mood (conditional, conjunctive) or in the realis mood (indicative); in other words, the phenomenon was attested with all relevant

combinations of mood in the higher clauses. Moreover, it was attested both in restrictive and non-restrictive relative clauses. Pajusalu and Pajusalu (2010) observed that the conditional mood in Estonian relative clauses is sensitive to the specificity of the head noun, and the polarity and tense of the predicate of the superordinate clause. In the case of deeply embedded clauses, it remains for further research to determine the exact properties of the sentence – the polarity of higher clauses, the position of the clause relative to its main clause, the tense of higher clauses, or other factors – evoking the absolute and the relative interpretation.

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Abbreviations

ACC	accusative case	IND	indicative mood
ADV	adverb	INE	inessive case
ALL	allative case	INF	infinitive
APP	active past participle	IRR	irrealis
C	main clause	LAT	lative case
C1	first-order embedded clause	NOM	nominative case
C2	second-order embedded clause	O	object
CNG	connegative	PART	partitive case
COM	comitative case	PL	plural
COND	conditional mood	POSS	possessive suffix
CONJ	conjunctive mood	PRS	present tense
DAT	dative case	PST	past tense
DEF	definiteness marker	PTCP	participle
ELA	elative case	S	subject
ESS	essive case	SG	singular
GEN	genitive case	SoAs	state-of-affairs

References

- Arkhangelskiy, Timofey. 2019. *Corpus of Contemporary Literary Moksha*. <<http://moksha.web-corpora.net>>
- ENC 2019 = *Estonian National Corpus, version 2019*. Accessible in Sketch-Engine: <<https://www.sketchengine.eu>>
- Erelt, Mati. 2017a. Öeldis [Predicate]. In Erelt, Mati & Metslang, Helle (eds.), *Eesti keele süntaks* [Estonian syntax] (Eesti keele varamu III), 93–239. Tartu: University of Tartu Press.
- Erelt, Mati. 2017b. Liitlause [Complex sentence]. In Erelt, Mati & Metslang, Helle (eds.), *Eesti keele süntaks* [Estonian syntax] (Eesti keele varamu III), 647–755. Tartu: University of Tartu Press.
- Holvoet et al. 2021 = Holvoet, Axel & Lindström, Liina & Daugavet, Anna & Laugalienė, Asta. 2021. Irrealis in Baltic and Baltic Fennic. *Baltic Linguistics* 12. 349–411.
- Kehayov, Petar. 2016. Complementation marker semantics in Finnic (Estonian, Finnish, Karelian). In Boye, Kasper & Kehayov, Petar (eds.), *Complementizer semantics in European languages*. (Empirical Approaches to Language Typology 57), 449–497. Berlin – Boston: De Gruyter Mouton.
- Kehayov, Petar. 2017. The fate of mood and modality in language death: Evidence from minor Finnic (Trends in Linguistics, Studies and Monographs 307), Berlin – Boston: De Gruyter Mouton. <<https://doi.org/10.1515/9783110524086>>
- Letuchiy, Alexander B. 2020. The analogues of tense interpretation in Russian embedded clauses: absolute vs. relative modality, absolute vs. relative aspect. In *Computational linguistics and intellectual technologies: Proceedings of the international conference "Dialogue-2020"*. The additional volume. <<https://www.dialog-21.ru/media/5173/letuchiyab-143-1.pdf>>
- Letuchiy, Alexander B. 2021. *Russkij jazyk o situacijax: Konstrukcii s sentencial'nymi aktantami* [Russian about situations: Constructions with complement clauses]. Saint-Petersburg: Aletheia.
- Mithun, Marianne. 1999. *The languages of native North America*. Cambridge: Cambridge University Press.
- Pajusalu, Renate & Pajusalu, Karl. 2010. Konditsionaal relatiivlauses [The conditional in a relative clause]. *Eesti ja soome-ugri keeleteaduse ajakiri = Journal of Estonian and Finno-Ugric Linguistics* 1(2). 243–254.
- VISK = Hakulinen, Auli & Vilkuna, Maria & Korhonen, Riitta & Koivisto, Vesa & Heinonen, Tarja Riitta & Alho, Irja. *Ison suomen kieliopin verkoversio* [The comprehensive grammar of Finnish, online version] (Kotimaisten kielten tutkimuskeskuksen verkkojulkaisuja 5). <<http://scripta.kotus.fi/visk/>> (Accessed 2023-05-21.)