A negation-tense interaction in Georgian Sign Language

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We describe an intriguing interaction of negation and tense in Georgian Sign Language (GESL), a sign language which to date has received close to no attention by linguists. GESL verbs that employ an irregular negation strategy in the present tense (modal verbs and the verb KNOW) require double marking in the past tense, i.e. the irregular negative form combines with the negative particle NOT, which is not used in the present tense with these verbs. The GESL data thus provide us with direct evidence for an active contribution of the feature tense in the grammar of GESL – in contrast to most other sign languages previously studied. We also offer a cross-linguistic perspective on the data by discussing instances of Negative Concord reported for various sign languages as well as tense-negation interactions attested in spoken languages.

Keywords: Georgian Sign Language, negation, modal verb, Negative Concord, tense

1   Introduction

Georgian Sign Language (GESL) is the sign language used by Deaf and hard-of-hearing people in Georgia. At present, it is unknown how many people use GESL for communication in daily life, but it is estimated that at least 2,500 people use GESL on a regular basis.

Before becoming independent in 1991, Georgia was part of the Soviet Union, and it does therefore not come as a surprise that the sign language has been influenced by Russian Sign Language (RSL), especially at the lexical level – similar to other sign languages in former parts of the Soviet Union. This influence notwithstanding, the available evidence suggests that GESL is an independent language, which is actually gaining strength in recent years, emancipating itself from the RSL influence – also thanks to activities of the local Deaf community.

To date, very few linguistic studies on GESL are available. In 2012, an overview of the language, including sociolinguistic information and a sketch of its grammar, has been published (Makharoblidze 2012), followed by the publication of a GESL-Georgian dictionary with 4,000 entries (Makharoblidze 2015a; see http://gesl.iliauni.edu.ge/ for the online version).[1] In a first linguistic study of GESL, Makharoblidze (2015b) describes the use of a number of indirect object markers.

In this article, we report on a grammatical phenomenon that we came across when starting to investigate the verbal system of GESL: an intriguing interaction between negation

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and tense, which, to the best of our knowledge, has never been reported for any other sign language. At the outset, it has to be pointed out that GESL negation has not been studied in detail, and that it is not the aim of the present study to offer a description of standard negation in GESL. Still, in Section 2, we will provide some basic information on how negation is realized. In Section 3, we turn to the negation-tense interaction. In a nutshell, we observe that with a few verbs, negation is realized differently in the past tense, namely by means of double marking. In Section 4, we put our findings in typological perspective.

Before turning to negation, let us add a few words on methodology. Instances of the pattern we are going to describe had initially been observed by the first author when studying aspectual and modality distinctions in GESL. For this purpose, data had been elicited from three native (second and third generation) signers. Subsequently, similar examples were found in recordings of natural signing between native signers. All instances were annotated and discussed with the signers, as well as a hearing GESL interpreter whose first language is GESL. These discussions (i) confirmed the grammaticality of the elicited examples and the examples extracted from the recordings, (ii) yielded additional examples, and (iii) provided us with ungrammatical examples.

2   Negation in Georgian Sign Language

As pointed out above, it is not our goal to offer a description of the system of negation in GESL. The data we collected so far strongly suggest that GESL features a manual dominant negation system, that is, a manual negative marker is required in order to negate a clause. In a non-manual dominant system, a proposition can be negated by a non-manual marker only, but this strategy is judged as ungrammatical by our informants (for typological studies on that dichotomy, see Zeshan (2004, 2006); for a theoretical approach, see Pfau (2016)). Still, a side-to-side headshake is commonly observed in negative clauses in GESL, and when present, it always accompanies the manual negator. In the few cases, in which no (observable) headshake was present, the signers used a negative facial expression (which, however, may also accompany utterances with headshake). The available data suggest that use of the headshake is a violable preference rather than a systematic distribution guided by, for instance, sentence type or verb semantics. Note that in the following discussion, we will neglect the headshake, as we are not concerned with its obligatory presence or its scope.

The figures below illustrate the pattern of basic clausal negation that we have identified, a negated intransitive clause involving the predicate SLEEP in Figure 1, a negated transitive clause with the predicate WRITE in Figure 2. In both cases, the manual negative sign NOT, which involves a sideward movement of the hand, occupies the clause-final position.[2]

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[2] GESL has another negative particle, which is articulated with a ☝-hand with a forward movement starting from the nose; we therefore gloss it as NEG-☝. This particle can be used in all tenses, and can appear in all contexts in which NOT can be used – with one crucial exception: it cannot combine with modal verbs, as it carries some modal meaning itself, namely the meaning 'cannot'. The particle is often used in polite contexts. Compare, for instance, INDEX₁ WRITE NOT ('I did not write') with INDEX₁ WRITE NEG-☝ ('I could not write').

Figure 1. Negated intransitive clause 'Yesterday I did not sleep'

Figure 2. Negated transitive clause 'I do/did not write a letter'
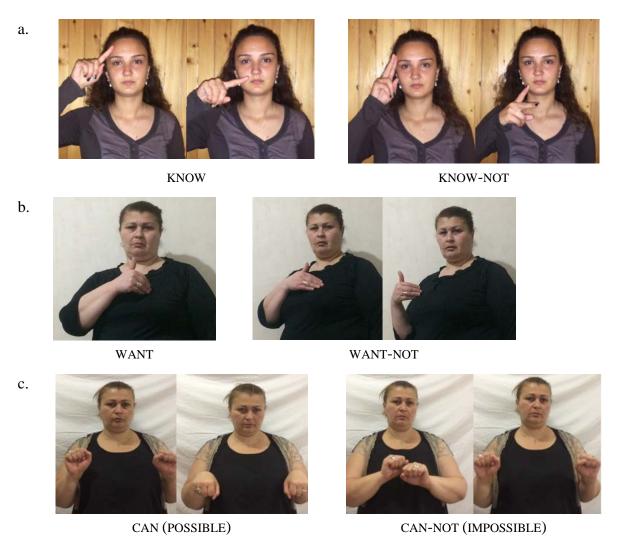
In many sign languages, certain verbs, in particular modal verbs, display irregular negation, whereby an irregular form may result from cliticization, affixation, or suppletion (e.g. Shaffer (2002) for American Sign Language (ASL); Sapountzaki (2005) for Greek Sign Language; Pfau & Quer (2007) for German Sign Language (DGS) and Catalan Sign Language (LSC); Zeshan (2004) and Quer (2012) for overviews). As for GESL, we have observed such irregular forms for the modal verbs WANT and CAN (POSSIBLE) as well as for the (lexical) verb KNOW (we acknowledge the possibility that KNOW may also function as an epistemic modal), and these are the verbs that we will focus on in the following. However, it is not unlikely that future studies will reveal that other (modal) verbs pattern similarly.[3] It is known that RSL features a considerable number of irregular negative forms, and given the influence of RSL on GESL, it is possible that some of these forms have been borrowed by GESL.

In Figure 3, we provide the positive and negative forms of the three verbs. The negative counterpart of KNOW in Figure 3a is characterized by a change in handshape: while KNOW is articulated with a ʙ-hand, KNOW-NOT features a ᴛ- or ʏ-hand. The negative form of WANT

NEG-f̅ will not be considered in the present study, but it is interesting to note that spoken Georgian has a negative particle (*ver/vera*) with similar modal semantics.

[3] Actually, the modal MUST also has an irregular negative form. However, we exclude MUST from our discussion, as it seems that it is not commonly used in past tense contexts, which are the contexts that are relevant to our discussion in Section 3. Unfortunately, the examples we have collected so far do not allow us to offer an explanation for the behavior of MUST. It has been claimed that in (some) spoken languages, epistemic modals cannot be under the scope of tense (Cinque 1999; Stowell 2004), but in the examples we have, and the ones we discussed with informants, MUST is used deontically – and still, informants rejected the past tense use.

shown in Figure 3b involves a movement that is not present in its positive counterpart: while WANT contacts the contralateral side of the chest twice, WANT-NOT moves from the contra- to the ipsilateral side of the chest, being in constant contact with the body. Finally, the modal verb CAN is negated by means of a movement change, as illustrated in Figure 3c: in CAN, the hands move downward, while in CAN-NOT, they move outward.

a.

KNOW   KNOW-NOT

b.

WANT   WANT-NOT

c.

CAN (POSSIBLE)   CAN-NOT (IMPOSSIBLE)

Figure 3. Positive and negative forms of GESL verbs: (a) KNOW – KNOW-NOT, (b) WANT – WANT-NOT, and (c) CAN – CAN-NOT (POSSIBLE – IMPOSSIBLE)

Crucially, in the present tense, these special forms have to be used; that is, clauses can neither be negated by means of the positive counterpart in combination with NOT nor by the positive counterpart combined with a headshake (similar to what Pfau & Quer (2007) describe for DGS and LSC).

3   Interaction of negation and tense

The usual strategy for realizing negation that we described in the previous section, i.e. combination of the verb with the manual negator NOT (and a headshake), applies to verbs irrespective of the tense specification of the clause. Actually, the example in Figure 1 is interpreted as referring to a past event due to the use of the adverbial YESTERDAY, but it would look the same if the adverbial TOMORROW was used. Similarly, the example in Figure 2 can be interpreted as past or present, depending on the context.

However, things are strikingly different for the verbs that have an irregular negative form. As mentioned before, this unexpected pattern had been noticed when studying GESL modal verbs and eliciting clauses with different tense specifications (as overtly indicated by adverbials) from native signers. We were surprised to see that in past tense contexts, they systematically combined the special negative form with the manual sign NOT. Negation is thus marked twice, and we are dealing with Negative Concord, as the meaning of the clause remains negative (see Section 4.1 for further discussion). In Figures 4–6, we provide examples that illustrate this pattern for the three verbs. In all cases, NOT must follow the negative modal.[4]

LAST	WEEK	**KNOW-NOT**
NOT	WHAT	ANSWER

Figure 4. The verb KNOW-NOT used in a past tense context: 'Last week, I did not know what to answer'; note the combination of the irregular negative form KNOW-NOT with the negator NOT

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[4] Within Minimalist theories of Negative Concord (Zeijlstra 2004, 2008), a question that arises is which element carries the negative meaning or, to put it differently, which element carries an interpretable negative feature [iNeg] and which one carries an uninterpretable negative feature [uNeg] (for an application to sign languages, see Pfau (2016)). At present, we can only offer some speculations on that matter. Given that both the negative particle and the negative modal can appear by themselves in the present tense, it might be tempting to assume that they carry [iNeg]. However, given that Negative Concord is defined as an Agree relation between a single feature [iNEG] and one or more features [uNEG] (Zeijlstra 2004), this assumption is problematic, as the examples in Figures 4–6 would then contain two instances of [iNeg]. It is possible that [iNeg] is associated with a negative operator while the manual negative signs both carry [uNeg] – similar to what Zeijlstra (2008) proposes for Czech. Given that in the present paper, we do not attempt to offer a syntactic account, we leave this issue for future research.

Figure 5. The verb WANT-NOT used in a past tense context: 'Yesterday I did not want to paint it'; note the combination of the irregular negative form WANT-NOT with the negator NOT

Figure 6. The verb CAN-NOT used in a past tense context: 'Yesterday it was impossible to go there / one could not go there'; note the combination of the irregular negative form CAN-NOT with the negator NOT

Following the observation of this pattern, further discussion with the informants revealed that use of double marking is indeed obligatory. Examples like the one in (1a), in which the negative form of CAN is used by itself in a past tense context were judged as ungrammatical, and the same turned out to be true for the other two verbs. On the other hand, double marking

is limited to the past tense. As (1b) illustrates for the verb WANT, use of an irregular negative form in combination with NOT leads to ungrammaticality in the present tense, irrespective of the position of NOT (and the same is true for the future tense).

(1) a. * LAST NIGHT INDEX$_1$ CAN-NOT SLEEP
         'Last night I could not sleep.'
     b. * TODAY BROTHER WANT-NOT NOT SWIM
         'Today my brother doesn't want to swim.'

To the best of our knowledge, a comparable pattern of tense-specific double marking has not been described before for any sign language. We take this pattern to indicate that tense, which is never morphologically marked on verbs in GESL, is grammatically active in the language. Note that some studies on sign languages couched within the Generative Grammar framework assume that tense is present in the phrase structure (in the form of a tense or inflectional phrase, TnsP/IP; cf. Pollock 1989) despite the absence of tense inflection. These studies usually assume that modal verbs are hosted by TnsP/IP (Neidle et al. 2000; Pfau & Quer 2007; Cecchetto et al. 2009; Gökgöz 2011). Still, these studies do not demonstrate that tense is a grammatically relevant feature that would, for instance, trigger verb movement or some other grammatical operation.[5] In principle, modals might as well be hosted by dedicated modal projections (Cinque 1999). In contrast, the patterns we report clearly show that tense has a grammatical impact in GESL in that it determines the choice of negation strategy – albeit for a small group of verbs.

4   Cross-linguistic perspective

The GESL pattern we discussed in the previous section has two crucial components: first, special forms of negative modals, and second, Negative Concord. As for the first component, we already mentioned in Section 2 that the idiosyncratic behavior of modal verbs in the context of negation is well-documented in the sign language literature. In Section 4.1, we address the second component, Negative Concord in sign languages. Subsequently, in Section 4.2, we turn to tense-specific negation strategies attested in spoken languages.

4.1 Negative Concord in sign languages

Studies on the expression of negation in both manual dominant and non-manual dominant sign languages have revealed that some (but not all) sign languages allow for Negative

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[5] Zucchi (2009) argues that verbs in (one variant of) Italian Sign Language (LIS) can inflect for tense by means of non-manual marking: a neutral shoulder position for present tense, a backward shoulder position for past tense, and a forward shoulder position for future tense. This could be taken to imply that in this variant of LIS, verbs do indeed move to Tns (see also Grose (2003) for a discussion of tense in ASL).

Concord (NC) involving two manual negative elements. In addition, it has been argued that in some sign languages, the co-occurrence of a manual negator and the headshake may instantiate NC. Here, we will only be concerned with NC involving two manual signs (see Quer (2012) and Pfau (2016) for discussion of both types of NC). The examples in (2) illustrate NC involving different types of negative signs. In the LSC example (2a), the basic clause negator NOT combines with the negative adverbial NEVER (adapted from Pfau & Quer 2007: 135); in the Jordanian Sign Language (LIU) example in (2b), a negative clitic co-occurs with the basic clause negator (Hendriks 2007: 124); and in the ASL example in (2c), the negative adverbial NEVER and the n-word NOTHING are combined (Fischer 2006: 194). In contrast, NC of this type has been claimed to be ungrammatical in LIS and DGS (Geraci 2005; Pfau 2016).

(2)   a. $\overline{\text{hs}}$
        INDEX₁ SMOKE **NOT NEVER**   [LSC]
           'I have never smoked.'

     b. $\overline{\text{y/n}}$ $\overline{\text{hs}}$
        MATHS, LIKE^**NEG** INDEX₁ **NEG**   [LIU]
           'I don't like maths.'

     c.   INDEX₁ **NEVER** SEE **NOTHING**   [ASL]
           'I never see anything.'

NC involving two manual signs is also attested (but not obligatory) in GESL, as the examples in (3) illustrate. In (3a), the n-word NOT^WHO ('nobody') combines with the basic clause negator NOT, while in (3b), the negative adverbial NEVER co-occurs with the n-word NOTHING, similar to what we observed in the ASL example (2c).

(3)   a.   **NOT^WHO** SWIM **NOT**
           'Nobody is swimming.'

     b.   INDEX₂ **NEVER** TELL **NOTHING**
           'You never tell me anything.'

Returning now to negative modals, it has been observed for some sign languages that these negative signs, too, occasionally participate in NC.[6] This is illustrated for ASL in (4a), taken from Fischer (2006: 194), and for NGT in (4b), an example that comes from the Corpus NGT (see Oomen & Pfau (2017) for a study of NGT negation based on corpus data). In (4a) the negative modal combines with the negative determiner (or n-word) NONE. (4b) is more similar to the GESL examples in Figures 4–6, in that the negative modal (a suppletive form) combines with the negative particle NOT. Still, in both sign languages, NC is neither limited to a certain tense, nor obligatory.[7]

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[6] This pattern is reminiscent of Negative Concord in non-standard variants of English; for instance, *I can't get no satisfaction* (Rolling Stones) or *It ain't no cat can't get in no coop* (Labov 1972: 130).

[7] Geraci (2005) provides the example in (i) from Italian Sign Language which suggests that the combination of a negative modal and the n-word NOBODY is marginally acceptable under a double negation reading in which the

(4) a. DARK, **CAN'T** SEE **NONE** PEOPLE   [ASL]

  'It was so dark that I couldn't see anybody.'

<u>   hs   </u>

  b. BUT **MUST-NOT NOT** LEARN   [NGT]

  'But you don't have to learn (it).'

Taken together, GESL adds to our understanding of the interaction between modals and negation in two respects. First, it presents us with yet another example of a sign language displaying irregular negation strategies for a subclass of verbs. Second, it features Negative Concord of a type that has not previously been described for any other sign language: obligatory, tense-specific Negative Concord.

4.2 Interaction of negation and tense

In Section 3, we described that certain GESL verbs, which have an irregular negative counterpart in the present tense, are negated by a double marking strategy in the past tense: the irregular negative form obligatorily combines with the negative particle. This raises the question how common or exotic tense-specific negation strategies are cross-linguistically – a question that we turn to now.

  The comprehensive typological study on sentential negation by Miestamo (2005) reveals that interactions between negation and tense are actually not uncommon across spoken languages. In the appendices to his book, Miestamo provides sketches of negation strategies in 297 languages. Going through the examples, in particular the data table in Appendix III, we observe that a considerable number of the languages employ tense-specific negation strategies. Taking into account only cases in which different tense specifications result either in the choice of a different negative marker – be it a negative affix or a negative particle[8] – or in the use of an additional negative marker, we find that 53 out of the 297 languages (18%) display tense-specific negation strategies (occasionally even more than two). Clearly, we are not dealing with a typological rarity. Moreover, it is evident that languages differ from each other in how they group different tenses together. In Cantonese, for instance, the particle *m̀h* is used in the present and future tense, while in the past, the negative existential *móuh* is added. In contrast, in Maba (Nilo-Saharan, Maban – Chad), the present and past/perfect tenses are grouped together and are negated by the suffix *-ándɛ*, while the future tense is negated by the suffix *-tan*.

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two negations cancel each other out (Geraci 2005: 224). This semantic outcome is crucially different from what we observe in GESL and in (4).

  (i) ? SMOKE **CANNOT NOBODY**

    'Everybody must smoke.'

[8] Payne (1985: 215ff) discusses the role of tense-specific strategies in languages that employ negative auxiliaries.

More interesting in the present context are cases in which one tense is negated by a single marker, while another tense requires double marking – and such cases are also attested in the sample, although they are clearly less common. In Arapesh (Torricelli – Papua New Guinea), for instance, future tense negation requires the clause-initial particle *kobwi* (5b), while non-future tenses are negated by a combination of the two markers *wo* and *e* (a "discontinuous morpheme" in Miestamo's terms; see (5d) from Conrad & Wogiga (1991), cited in Miestamo (2005: 257)).

(5) a. wotak   m-u-lpok   b. **kobwi** wotak   m-u-lpok
        more   1PL-IRR-fight   NEG   more   1PL-IRR-fight
        'We will fight some more.'   'We will not fight anymore.'

     c. n-a-nak   d. **wo** n-ú-nak   **e**
        3SG-R-go   NEG 3SG-IRR-go NEG
        'He went.'   'He didn't go.'

In other words: just as in GESL, the past tense requires double marking while in the future, negation is only marked by a single particle. There are, however, two crucial differences: (i) while in the GESL cases discussed in Section 3, present tense patterns with future tense, in Arapesh, present tense patterns with past tense; (ii) in GESL, the negative element that is used in the present tense (i.e. the irregular negative verb) is also used in the past tense, but then in combination with an addition element, while the same is not true for Arapesh, where there is no overlap in the elements used.

     Let us therefore consider one more example, from Lewo, a language spoken in Vanuatu (Austronesian, Oceanic). In the realis, two negative elements are required, *re* and *poli* (6b), both of which follow the verb. In the irrealis (future), however, only the first of the two is used (6d).[9] Note that in addition, realis/irrealis auxiliaries (*pe/ve*) are used in the negative clauses (Early 1994, cited in Miestamo 2005: 79); also note that *pano/vano* versus *pa/va* are simply utterance-final vs. non-final variants of the lexical verb. Lewo thus patterns more closely with GESL, as one of the negative markers (*re*) is used in both contexts. Still, just as in Arapesh, present and past tense are grouped together (realis) and distinguished from future (irrealis) in the context of negation. Also, we have to keep in mind that in GESL, both negative elements – the negative particle and the negative modal – can appear independently from each other, while Lewo *poli* only appears in combination with the negative marker *re*.[10]

(6) a. naga   ø-pano   b. naga pe   ø-pa   **re**   **poli**
        he   3SG-R.go   he   AUX.R 3SG-R.go NEG NEG
        'He has gone.'   'He hasn't gone.'

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[9] Hausa (Afro-Asiatic, Chadic – Nigeria) displays a comparable pattern, but the choice of negation strategy depends on aspectual rather than tense features. In most TAM categories, negation is expressed by two elements: *bà*, which precedes the person-aspect complex, and VP-final *ba*. However, in the continuative, only the marker *bā* preceding the person-aspect complex is used (Newman 2000, in Miestamo 2005:285).

[10] We thank an anonymous reviewer for drawing our attention to this difference.

	c.	naga	ø-vano		d.	naga	ve	ø-va	**re**
		he	3SG-IRR.go			he	AUX.IRR	3SG-R.go	NEG
		'He will go.'				'He won't go.'			

Our brief discussion reveals that tense-specific negation strategies that are comparable to GESL with respect to quantity and quality of marking are also attested in spoken languages: a single negative marker is used in tense x, while in tense y, the same marker combines with an additional negative element (where x and/or y may include multiple tense specifications). Still, we have to keep in mind that in GESL, this is not the regular pattern (in contrast to e.g. Lewo), but is limited to a small number of (modal) verbs. We have not been able to find a spoken language in which the application of a tense-specific negation strategy would be constrained in a comparable way.

5   Conclusion

The present study is the first one to describe a tense-negation interaction, that is, the use of tense-specific negation strategies, for a sign language. The data thus provide us with a novel type of evidence for the role of tense in a visual-gestural language – an interesting finding, as verbs in sign languages do not usually inflect for tense. We conclude that the feature tense plays an active role in the grammar of Georgian Sign Language.

It remains to be pointed out that the pattern we described is certainly not borrowed from spoken Georgian. Georgian does feature Negative Concord, but not of the type reported in this article. In particular, Negative Concord is neither restricted to a small set of verbs nor to the past tense. Also, borrowing from Russian Sign Language (which has had considerable influence on GESL in the past) seems unlikely, as tense-specific negation strategies are not attested in that language (Vadim Kimmelman, personal communication). In future studies, we hope to address the behavior of further modals (e.g. MUST) and to investigate other types of Negative Concord that are not constrained to a certain tense.

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