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Expressions of Possession in Georgian Sign Language and Hong Kong Sign Language: An Intra-Modal Typological Study

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Koenders, Emily & Makharoblidze, Tamar. 2026. Expressions of Possession in Georgian Sign Language and Hong Kong Sign Language: An Intra-Modal Typological Study. ***Sign Languages and Linguistics Convergence Research,*** *3*(1), 1-52. The present study is an intra- and cross-modal comparison and syntactic analysis of expressions of possession in the NP and VP domain in two historically unrelated sign languages, namely Georgian Sign Language and Hong Kong Sign Language. The purpose of this study is to contribute the data of two smaller sign languages to the existing body of studies that exist on sign language possessive structures (e.g., Zeshan & Perniss, 2008). Georgian Sign Language and Hong Kong Sign Language display both similarities as well as striking differences. For example, for the possessive markers of both sign languages spatial agreement with the referential locus of the possessor is attested. On the other hand, Georgian Sign Language predominantly uses a genitive case marker, which is a phenomenon rarely seen in sign languages. For a cross-modal comparison, we discuss whether the notion of absolute and relative modality effects (cf. Zeshan & Palfreyman, 2017) captures the differences and similarities between possessive structures in sign and spoken language.

Key Words: Cross-Modal Typology, Georgian Sign Language, Hong Kong Sign Language, Intra-Modal Comparison, Modality Effects, Possessive Structures

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1. Introduction

Much work has been done in recent years on sign languages' intra- and cross-modal typology (e.g., Dixon & Aikhenvald, 2002; Dryer & Haspelmath, 2013; Haspelmath et al., 2001; Mantovan, 2015; Mantovan & Geraci, 2017; Zeshan & Palfreyman, 2017, 2020; Zhang, 2007, among others). The purpose of such typological studies is to broaden our understanding of variation between different sign languages (i.e., intra-modal comparison), as well as rethink and redefine spoken language research terminology when applied to sign languages and bring to light modality-specific variation (i.e., cross-modal comparison).

As Zeshan and Palfreyman (2017: 180-181) remark: "[i]n addition to large-scale typological studies, comparative research is increasingly being undertaken on smaller sets of sign languages." Such studies are necessary for data generation and collection, specifically for smaller and more understudied sign languages. These data can then contribute to larger, more comprehensive typological studies. Many such studies are captured in the work edited by Perniss et al. (2007), such as Herrmann (2007) on modal meaning in German Sign Language (DGS) and Irish Sign Language (ISL), and Pfau and Quer (2007), on negation and modals in Catalan Sign Language (LSC) and DGS; but also other studies, such as Gonçalves Carneiro et al. (2022), comparing nominal number across ten different sign languages, and Koenders (2025), on the differences in count-mass encoding between Hong Kong Sign Language and American Sign Language (ASL).

The present paper is such a smaller scale intra-modal typological study. It provides an intra-modal comparison of expressions of possession in Georgian Sign Language (GESL) and Hong Kong Sign Language (HKSL). As will be explained below, these two sign languages are historically unrelated. The former is an understudied sign language and therefore much of its grammatical characteristics are yet unknown. In order to further our typological knowledge of sign language diversity, this paper will not only offer a description of GESL's expressions of possession (see also Makharoblidze, 2012: 3), but provide a comparison with a sign language on which more data is already available, namely HKSL.

A large intra-modal study on the topic of possessive (and existential)

constructions in sign languages has already been carried out by Zeshan and Perniss (2008) and the authors that contributed to their volume. The volume includes analyses from Quer and GRIN on LSC, Hendriks on Jordanian Sign Language (LIU), Morgan on Japanese Sign Language (NS), Lutalo-Kiingi on Ugandan Sign Language (USL), Perniss and Zeshan on Kata Kolok, Schalber and Hunger on Austrian Sign Language (ÖGS), Ravelo Mendoza on Venezuelan Sign Language (LSV), De Weerdt and Vermeerbergen on Flemish Sign Language (VGT), Pichler and Hochgesang on ASL, and Nyst (2008) on Adamorobe Sign Language (AdaSL). We hope that our smaller scale typological study will further add to this list of sign languages whose possessive structures have been described and analysed, as has also been done in recent years by Cormier and Fenlon (2009) for British Sign Language (BSL), Loos (2012) for Sign Language of the Netherlands (NGT), Abner (2013) on ASL, and Makaroğlu (2024) on Turkish Sign Language (TİD). The present paper introduces GESL's and HKSL's attributive (Section 2) and predicative (Section 3) possessive structures as well as their possessive semantics (Section 4), but further aims to contribute to the typological aspect of this type of research by dwelling on the question whether it is useful to talk about modality effects (cf. Zeshan & Palfreyman, 2020) in cross-modal typological research (Section 5).

1.1. Possession

Possession is the state of having and owning an item (e.g., a car), a quality (e.g., knowledge), or a relation (e.g., a brother). Different languages express this relationship between possessed items and their possessors through various means. There exists typological research on linguistic expressions of possession (e.g., Aikhenvald & Dixon, 2013; Heine, 1997; Nichols, 1988; Seiler, 1983, 2001, among others). Cross-linguistically, languages can use various methods to express possession. Generalising across languages (Aikhenvald, 2013), they include the following:

(1) Lexical: that is words and signs that express possession such as possessive pronouns. For example, English *my* and *your,* or the Mandarin grammatical

particle DE (的) when used as a possession indicator;

(2) Possessive affixes: for example, the Georgian verbal prefix *i-* (ი-) and *u-* (უ-) for a benefactive indirect object, or English *'s* in *mother**'s** car*;

(3) Grammatical case: specifically the genitive case, as in German ***des*** *Mann**es*** 'of the man,' and to a certain extent also dative case with a benefactive meaning, as in the French *je **me** prends un café,* lit: 'I drink for myself a coffee';

(4) Verbal possession: for example through verbs like *to have* (e.g., English *I have a dog*) and *to be* (e.g., Scots Gaelic ***tha*** *cù agam,* lit: 'there is to me a dog', and LSC IX$_1$ MONEY **THERE-BE** 'I have money,' Quer & GRIN, 2008: 46, (49));

(5) Pre/postpositions: such as English *for, to, of*, etc. (e.g., *the mother **of** my father*), or the Hebrew preposition ל in combination with the adverb יֵשׁ *yesh* 'there is/are,' as in יש לי כלב, lit: 'there is to me a dog,' i.e., 'I have a dog';

(6) Word order: such as through juxtaposition, like the Cantonese 我老豆 ngóh lóuhdauh, lit: 'I father,' i.e., 'my father,' or construct state, as in Hebrew סוסי המלך 'the king's horses'; and

(7) Non-manual markers (NMs): for example, in HKSL maintaining eye contact with the addressee when signing FATHER GO WHERE to imply a second person possessive pronoun: 'where did [your] father go.'

The purpose of typological studies on expressions of possession is to establish which different linguistic strategies typically coexist in the same language (e.g., Morgan, 2008: 73 "(…) there are 'have' languages and there are 'be' languages," see point (4) above). Cross-modal typological research can also establish how the above-mentioned strategies interact with language modality (see Zeshan & Palfreyman, 2020). For example, the NMs mentioned in point (7) likely occur most frequently in sign languages, whereas pre- and postpositions, point (5), are often absent from sign languages due to the modality's preference for simultaneous structures. Section 5 of the present paper will offer a discussion of such *modality effects*.

1.2. Georgian Sign Language

Georgian Sign Language (GESL) is a linguistic minority language used by the Deaf and hard-of-hearing people of the country of Georgia. As reported by Makharoblidze (2015b), about 2500 people are registered at the Union of the Deaf of Georgia, however, the exact number of Deaf and hard-of-hearing individuals in the country is unknown. GESL was long thought to be a branch of Russian Sign Language (RSL) or Soviet Sign Language, brought to the country during the reign of the former Soviet Union. But despite RSL having influenced GESL — especially in terms of Lexicon — ongoing research on GESL is proving that the structural differences between RSL and GESL indicate that GESL finds its origins elsewhere (Makharoblidze, 2015b; see also the GESL dictionary by Makharoblidze, 2015a).

1.3. Hong Kong Sign Language

Hong Kong Sign Language (HKSL) is the visual-manual language used by members of the Deaf and hard-of-hearing community in Hong Kong. The origins of HKSL can be traced back to when a Deaf signing couple moved from Shanghai and Nanjing (China) to Hong Kong after World War II. They brought local varieties of Chinese Sign Language (CSL) with them to teach the Hong Kong Deaf community at the signing school they established. Prior to this, local signing must have existed in Hong Kong which interacted with the Shanghai/ Nanjing signs used in educational settings (Sze et al., 2013; Woodward, 1993). HKSL subsequently developed into an independent language.

1.4. Notation conventions

For the transcription of all sign language data samples, each individual sign is glossed in SMALL CAPS with the closest English translation. When that English translation of a single sign consists of more than one word, a hyphen (-) is inserted between those words in the English gloss. In sign languages, personal pronouns are expressed by pointing at discourse referents (i.e., index signs; IX). Subscript numbers indicate the person of the pronoun (e.g., IX_1 for 'I,' IX_2 for

'you,' and IX_3 for 'he/she/they.SG.'). Subscript numbers attached to verbs are used to express person agreement (e.g., $_2GIVE_1$ 'you give me'). Sign language compounds are glossed using a circumflex (^) between the components of the compound (e.g., CAR^RESPONSIBLE 'driver'). Subscript letters denote spatial agreement with referential loci in the signing space (e.g., CAR BE-LOCATED+CL: $vehicle_a$ 'the car is standing there (a)'). The CL in this example is a verbal classifier. Verbal classifiers are used to denote spatial relations and allocation (see Supalla, 1986).

In addition to manual signs and the use of space, non-manual markers (NMs) are an important aspect of sign language grammar. They include facial expressions, movements of the mouth, and movements of the torso. An important type of NM is a body lean. For body leans, signers lean their torso slightly to the left or right to mark agreement with the referential loci of discourse referents or to show disambiguation. As with other types of spatial agreement, body leans are glossed using subscript letters.

1.5. Data sources and collection procedures

All GESL data samples presented in the present paper are taken from seven hours of free narrative data and well as data elicited using visual and written stimuli, previously collected for the purpose of other research projects. The recordings contain data of 55 Deaf GESL signers aged 20–70. All participants signed informed consent forms for their data to be used for research and publication purposes. These recordings will likely be made available as a GESL language corpus in the future and are the property of Ilia State University.

All HKSL data samples shown in the present paper resulted from elicitations from and consultations with four native HKSL signers. All images shown in the present paper are the reenacted utterances provided by the native HKSL sign language consultants. The signer in the images is a Deaf native HKSL signer.

1.6. Organisation of the present paper

Section 2 of the present paper introduces the types of NP-internal structures that exist in GESL (Section 2.1) and HKSL (Section 2.2), followed by a structural comparison between both languages (Section 2.3). Section 3 discusses

VP-internal possessive structures in GESL (Section 3.1) and HKSL (Section 3.2). This section also deals with GESL's and HKSL's verb have (Section 3.3) and provides a structural comparison between both languages (Section 3.4). Section 4 shows how GESL's and HKSL's different possessive structures interact with the various semantic aspects of possession. Finally, Section 5 provides an intra- and cross-modal typological comparison and discusses the topic of modality effects. Section 6 concludes this paper. Though the present paper focuses on GESL and HKSL possessive structures, its aim is to also contribute the data of these two sign languages to the broader discussion of possessive structures both in the sign modality, as well as from a cross-modal typological perspective. Therefore, wherever relevant, the text draws cross-linguistic comparisons (both intra- and cross-modal) in terms of possessive structures.

2. NP-internal possession

Of all the linguistics means to express possession, as briefly mentioned in Section 1.1 above, many are NP-internal. Heine (1997) argues that a possessive relationship posited within the noun phrase is presupposed (e.g., *my book*), whereas a predicative possessive is asserted (e.g., *the book is mine*). Both GESL and HKSL make use of attributive possessive structures that resembles those found in many other sign languages. However, within the sign modality, GESL is unique in its use of a genitive case marker.

2.1. GESL

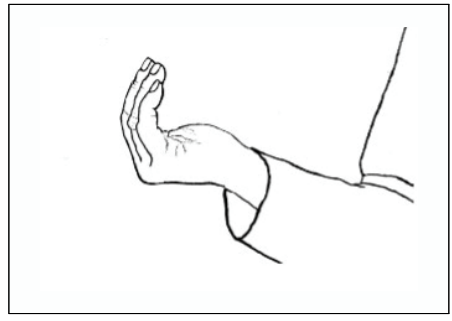
2.1.1. GESL's genitive and dative case markers

The use of genitive case markers for possessive structures is common in spoken languages, including German, Galo, and Temboka (Aikhenvald, 2013: 7). Though case markers are a rare occurrence in sign linguistic research,[1] Makharoblidze

1) Meir (2003) has argued that, through grammaticalisation, a case-marked pronoun ($PRO_{[bC]}$ for (1st/2nd/3rd person) pronominal objects) has evolved from the noun PERSON in Israeli Sign Language.

(2015b, 2024) has nevertheless made several claims that different types of grammatical case markers exist in GESL. In fact, genitive case marking (GCM; see also Makharoblidze, 2015b on indirect object case markers in GESL; and Makharoblidze, 2024 with an overview of the entire GESL noun case system) is the most commonly used NP-internal method for GESL to express a possessive structure.

The GCM (shown in Figure 1) follows the possessor noun, as shown in (1). The non-manuals[2] that often accompany the GCM are a relaxed, slightly open mouth, as shown in Figure 2. As will be discussed in Section 3 below, non-manuals differentiate GESL's GCM from its predicative counterpart: the possessive marker BELONG.



[Figure 1] GESL genitive case marker (GCM)

(1) *GESL*

FATHER GCM TABLE

'father's table'

If it is abundantly clear from the context which of the two referents is the possessor, the GCM may follow the possessed noun as well, as in (2a). Since world knowledge informs us that a table cannot be a possessor because it is an inanimate object, it follows that the flexibility in word order shown in (2a) is

2) In neither GESL (e.g., BELONG) nor HKSL (e.g., POSS) do the non-manuals that accompany possessive signs spread to adjacent signs. For this reason, we have opted not to indicate non-manual spread in the glosses of our data samples.

allowed; however, if the possessive-relationship could be ambiguous (cf. (2b); *father's doctor* vs. *doctor's father*), there is no such flexibility. According to Makharoblidze (2024), the GCM originally only occurred after nouns denoting human referents, but its use is expanding to include different nouns referring to animate referents.

(2) *GESL*

a. FATHER TABLE GCM
'father's table'

b. *FATHER DOCTOR GCM
'father's doctor'

The GCM is either directed towards the possessor's assigned referential locus, or, if a referent has not yet been assigned a locus, the GCM can assign a locus the a referent. The GCM can also express plural possessor referents (e.g., 'the dogs' balls'). In such cases, GESL simply directs the GCM to the locus assigned to the plural referent, as shown in (3). The GCM shows no phonological distinction between singular or plural form, that is, none of its phonological parameters undergo modification to express number agreement.

(3) *GESL*

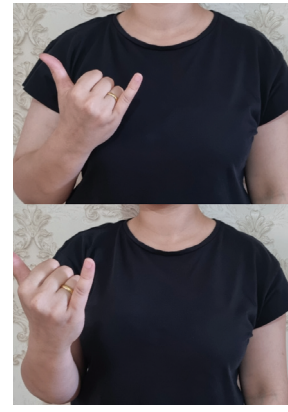
DOG $CL^{group}{}_{a}$ GCM_{a} BALL
'the dogs' ball'

GESL further has two case markers that express a "benefactive"[3] possessive case, namely a post-nominal dative case maker (DCM; see Figure 2 and (4)) — derived from an index sign, — and an indirect object marker (IOM; see Figure 3 and (5)). Both the DCM and IOM serve the function of expressing a benefactive possessive case (Makharoblidze, 2015b) and show agreement with referents' assigned loci.

3) See Aikhenvald (2013: 41) on benefactive possessive case.

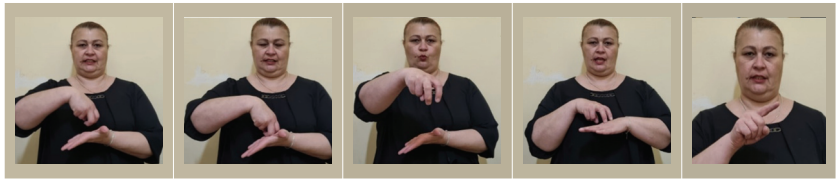


[Figure 2] GESL dative case marker



[Figure 3] GESL indirect object marker

(4) *GESL*



LETTER SEND DOCTOR DCM

'a letter for the doctor'

GESL (adapted from Makharoblidze, 2015b, Figure 5)

(5) IX_1 WRITE IOM_3

'I write [it] for him/her.'

2.1.2. Attributive possession in GESL: POSS

In addition to case markers, GESL also has a pronominal possessive (glossed as POSS) that closely resembles the GCM (cf. Figure 4b), but it is articulated slightly higher in the sign space (as shown in Figure 4a).

a. b.



[Figure 4] GESL's possessive pronoun POSS (left) and the GCM (right)

GESL's first person singular POSS ('my') has different specifications for the orientation- and handshape-parameters. For the first person singular POSS (i.e., $POSS_1$), the palm of the hand faces and makes contact with the signer's chest and the handshape is . This first person possessive pronoun has been attested in many sign languages, including HKSL (see Section 2.2.2 below), VGT (De Weerdt & Vermeerbergen, 2008), Kata Kolok (Perniss & Zeshan, 2008), USL (Lutalo-Kiingi, 2008), ÖGS (Schalber & Hunger, 2008) and ASL (Pichler & Hochgesang, 2008), among others.

For GESL's second and third persons POSS ('your' and 'his/her/their'; i.e., $POSS_{2,3}$), the back of the hand is oriented towards the possessor referent (or its locus) and the handshape is , as shown in Figures 1 and 4. Similar to GESL, LSC has a possessive pronoun SU/SEU which is only used for second and third person reference and differs in orientation and handshape from LSC's first person possessive pronoun (Quer & GRIN, 2008: 39-40). According to Zeshan and Perniss (2008: 16) the three handshapes , , and have been attested across 26 different sign languages for their respective POSS signs. GESL's -handshape is a unique occurrence. The iconic origins of GESL's POSS are the mimicking of a hand that is being held up when a beggar receives alms.

Under the influence of spoken Georgian possessive suffixes for kinship terms, see (6), GESL's POSS shows an interesting pattern in word order variation. Following spoken Georgian, for the kinship terms *mother, father,*

grandfather, grandmother, aunt, and *uncle*, GESL POSS follows the possessed noun, rather than the possessor (i.e., FATHER $POSS_1$ 'my father' vs. *$POSS_1$ FATHER, but: $POSS_1$ SON 'my son').[4)]

(6) *Georgian*
დედა-ჩემი
deda-chemi
MOTHER-1.SG.POSS
'my mother'

2.2. HKSL

Turning now to HKSL, which does not have a case marking system and in which the relationship between a possessor and a possessed item is commonly expressed through attributive possessives, either pronominally (e.g., *my book*, *your dog*, etc.) through the use of an index sign (IX), nominally (e.g., *the teacher's cat, the neighbour's garden*, etc.) through the use of a possessive marker, or through juxtaposition.

2.2.1. Personal pronouns

The personal pronoun IX precedes the noun (i.e., the possessed item). Agreement of IX with a referent's (assigned) locus represents the possessor, as shown in (7). The NP containing the personal pronoun IX can occur in argument position, — subject or object — as shown in (8a-b) respectively. Other sign languages for which the personal pronoun can occur in possessive constructions are LSC (Quer & GRIN, 2008), VGT (De Weerdt & Vermeerbergen, 2008), NS (Morgan, 2008), LSV (Ravelo, 2008), LIU (Hendriks, 2008), and Kata Kolok (Perniss & Zeshan, 2008).

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4) Aikhenvald mentions another interesting example of a dominant regional language (Mandarin) influencing possessive structure word order of a minority language (Hlai) in a way that parallels what is described here for Georgian and GESL (2013: 45, (60) and (61)).

(7) *HKSL*

a. IX$_1$ BOOK

'my book'

b. IX$_2$ DOG

'your dog'

(8) *HKSL*

a. IX$_1$ BOOK (IX$_a$) BLUE.

'My book is blue.'

b. IX$_2$ LIKE IX$_3$ DOG.

'You like her dog.'

2.2.2. Possessive pronoun POSS

Another pronominal possessive pronoun in HKSL is the possessive marker POSS (cf. Tang & Sze, 2002). In contrast to GESL's POSS,[5] HKSL POSS takes the form of a B-handshape () with the palm oriented towards the possessor for first, second, and third person referents. It is accompanied by a short, abrupt movement towards the possessor or the possessor's assigned locus. In other words, POSS is a preform for the possessor. Non-manual markers for the first person possessive marker (POSS$_1$) are a slightly rounded and open mouth (i.e., partial mouthing of the spoken Cantonese 'I' *ngóh*). For second and third person possessive markers (POSS$_2$ and POSS$_3$), the mouth is open, see Figure 5.[6]

5) Which, as described above, only uses the -handshape and the same hand-palm orientation for POSS$_1$, but the -handshape for POSS$_2$ and POSS$_3$. GESL POSS$_{2,3}$ have back of the hand oriented towards the possessor.

6) Our HKSL consultants did not corroborate the distinction made between POSS$_{det}$ and POSS$_{neu}$ as posited by Tang and Sze (2002: 306, Figure 12.7a-b).



POSS$_1$ POSS$_2$ POSS$_3$

[Figure 5] First, second, and third person possessive markers in HKSL

There are two phonological variants of POSS$_1$ in existence within the HKSL community. The difference between the two variants is the movement-parameter, with POSS$_{var2}$ containing a slight arch movement bouncing off the signer's chest, as shown in Figure 6. Though the two variants belong to different sociolects (i.e., signers having studied at different Deaf schools), they are interchangeable and mutually intelligible.



POSS$_{var2}$

[Figure 6] The phonological variant of POSS$_1$

Like the GESL GCM, POSS is either directed towards the possessor's assigned referential locus, or, if a referent has not yet been assigned a locus, POSS can assign the referent a locus.

HKSL and GESL (Section 2.1.2 above) POSS are remarkably similar to possessive pronouns attested in other sign languages, both in terms of phonology (i.e., handshape, orientation, and movement) and morphology (i.e., use of referential loci). Sign languages for which a comparable possessive pronoun POSS has been

attested include BSL (Cormier & Fenlon, 2009).

HKSL POSS can occur NP-internally as attributive possessive, or it can be used predicatively. However, the word order of NP structures that contain POSS are more rigid in HKSL than in, for example, ASL (Abner, 2013). HKSL attributive POSS follows the possessor noun, as shown in (9). The NP from (9a) can also occur in subject and object argument positions, as shown in (10). However, HKSL possessive markers cannot independently act as arguments (cf. English *yours is red*). In order to express the meaning in italics, HKSL uses index signs, as shown in (11).

(9) *HKSL*

a. FRIEND $POSS_a$ CAR

b. *$POSS_a$ FRIEND CAR

c. *$POSS_a$ CAR FRIEND

d. *FRIEND CAR POSSa

'(the) friend's car'

(10) *HKSL*

a. FRIEND $POSS_a$ CAR (IX_a) BLUE.

'My friend's car is blue.'

b. IX_2 LIKE FRIEND $POSS_a$ CAR.

'You like [my/your] friend's car.'

(11) *HKSL*

a. *$POSS_2$ RED.

b. IX_{2+} RED.

'Yours is red.'

2.2.3. Nominal possession or juxtaposition

When a possessed referent is inanimate, there is a tendency to drop POSS and mark possession through juxtaposition, as shown in (12). In (13), the

possessor and possessed noun are juxtaposed without POSS. This is possible because it is clear from world knowledge that the animate noun (FATHER) must be the possessor of WORK. Though POSS can be elided, word order remains fixed: *WORK FATHER TIRING 'father's work is very tiring' (cf. Kata Kolok's flexible word order for nominal possessor structures, Perniss & Zeshan, 2008). Other sign languages that allow juxtaposition to mark possession include Kata Kolok (Perniss & Zeshan, 2008), ÖGS (Schalber & Hunger, 2008), VGT (De Weerdt & Vermeerbergen, 2008), and LSC (Quer & GRIN, 2008). Juxtaposition is also a possessive structure that occurs in many spoken languages (Aikhenvald, 2013: 6-7).

(12) *HKSL*

a. TEACHER (POSS$_a$) BOOK
'(the) teacher's book'

b. MOTHER *(POSS$_a$) CAT
'mother's cat'

(13) *HKSL*

FATHER WORK TIRING.
'Father's work is very tiring.'

2.3. Interim discussion

2.3.1. Summary

Table 1 summarises GESL's and HKSL's NP-internal possessive structures. The table shows that GESL and HKSL only overlap in the existence of the pronominal possessive marker POSS. Nevertheless, POSS is only the preferred method of marking NP-internal possession in HKSL. As mentioned above, GESL predominantly uses the GCM. GESL does not allow for possessive marking through the use of personal pronouns (IX) or juxtaposition.

[Table 1] Overview of GESL's and HKSL's NP-internal possessive structures

	GESL	HKSL
Case markers	Genitive case marker: ▸ GCM (cf. (2a))	X
	Benefactive possessive case: ▸ DCM (cf. (4)) ▸ IOM (cf. (5))	X
Attributive possession	pronominal: ▸ POSS (cf. Figure 4a)	pronominal: ▸ POSS (cf. (9a)) ▸ IX (cf. (7a))
	X	juxtaposition (cf. (13))

An interesting difference between GESL and HKSL has to do with pragmatical inference. In cases where overt deictic reference is omitted, as in (14a), HKSL allows for the pragmatical inference of the possession as either first person or second person (in questions) unless context clearly indicates a third person interpretation. This has also been observed in Brazilian Sign Language (Libras; Berenz, 2002), Indo-Pakistani Sign Language (IPSL; Zeshan, 2003), French Belgian Sign Language (LSFB; Meurant, 2008), TİD and Kata Kolok (Perniss & Zeshan, 2008, see (14b)), BSL (Cormier & Fenlon, 2009: 401, (14)). Conversely, GESL does not allow for such pragmatical inference. The absence of overt reference to the possessor would lead to ambiguity in GESL. Only if a possessor has been introduced in the preceding context and can thus be logically inferred, does GESL allow for the elision of possessive markers.

(14) *HKSL*

a. FATHER GO-HOME.

'[My] father is going home.'

Kata Kolok (adapted from Perniss & Zeshan, 2008: 134, (7))

b. WH HOUSE WH?

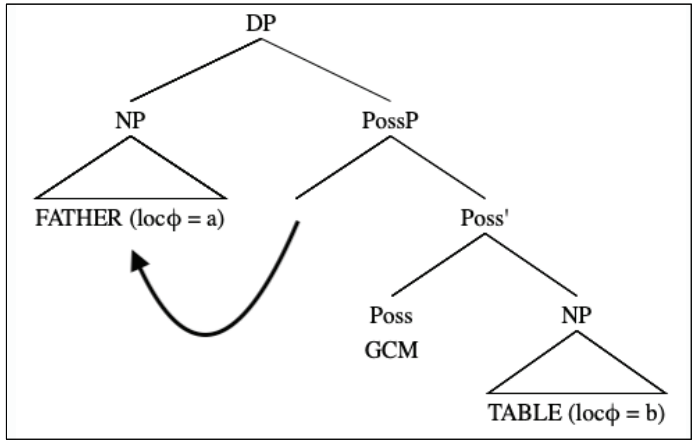
'Where is [your] house?'

2.3.2. Syntactic comparison

The GESL GCM and HKSL POSS do not differ in grammatical function nor

in their position in the NP: both follow the possessor noun and agree with its referential locus. We therefore assume a Minimalist Program approach (Chomsky, 2000) and propose that the GESL GCM and HKSL POSS occupy the same syntactic position, namely as the head of PossP. This is shown in the following structure (using GESL example (2a) above), as has been proposed for possessive items in other studies (e.g., Adger, 2003; Al-Qumairi et al., 2020; Holmberg, 2021; Niu, 2015; Yang, 2005, among others).

The possessor nominal originates in Spec,PossP and moves to Spec,DP (Alexiadou et al., 2007; Niu, 2015) to generate the definitive reading. Following Holmberg (2021), we assume the POSS-head can agree with an argument. We therefore argue that each N^0 has a locus-feature (locφ) for its referential locus in the signing space. Under a Minimalist system, agreement is a process whereby agreements features (φ) are copied from goals onto probes. $Poss^0$ probes for and agrees with the locφ of the possessor noun FATHER (i.e., the goal), which it is c-commanded by.[7] The locus-feature of the goal is then copied onto GCM(/POSS), which is why the possessive sign is produced with locative agreement at PF, as shown in Figure 7.



[Figure 7] Syntactic structure of GESL 'father's table' (cf. (2a))

7) Since possessive marker agreement occurs within the NP, the syntax of sign language verbal agreement falls outside the scope of this paper. For those who are interested, Pfau et al. (2018) give a comprehensive account of sign language agreement in the verbal domain.

3. Predicative possession

When possessive relations are marked outside of the NP, this is done by predicative possessive markers. Section 3.1 introduces GESL's predicate possessive marker BELONG, which belongs to a formal register,[8] and in Section 3.2 we discuss how HKSL POSS can also serve as a predicative possessive marker. Both GESL's BELONG and HKSL POSS are lexically related to the nominal attributive possessive marker POSS mentioned in Section 2 above. Other sign languages for which a etymological relationship between NP-internal and predicative possessive marker has been asserted include VGT (De Weerdt & Vermeerbergen, 2008), LSC (Quer & GRIN, 2008), ÖGS (Schalber & Hunger, 2008), LIU (Hendriks, 2008), and USL (Lutalo-Kiingi, 2008). Another means of expressing possession predicatively is through the verb HAVE. HAVE-possession in GESL and HKSL will be discussed in tandem in Section 3.3.

3.1. GESL

The GESL predicative possessive marker BELONG precedes the possessor noun, as shown in (15). Though the handshape, movement, and agreement features of BELONG are the same as the GCM, its non-manual markers are different. For BELONG the signer's lips are puckered and the cheeks are sucked in, both of these features are released at the end of the sign with a smacking of the lips (cf. Figure 4b). GESL has a negative particle NO/NOT which is used to negate all predicative constructions, including the possessive marker BELONG, as shown in Figure 8 and (16). Nevertheless, the use of GESL BELONG is restricted to formal usage, such as contexts of legal property and is presumably influenced by spoken Georgian. As mentioned above, the GCM is the possessive structure of choice for GESL. If possession should necessarily be marked predicatively, GESL uses the verb HAVE (see Section 3.3).

8) Based on consultations with ten native GESL signers who served as language consultants on the compilation of the GESL dictionary (Makharoblidze, 2015a) and three GESL signers who worked on GESL nominal morphology (Makharoblidze, 2025).

(15) *GESL*



BAG BELONG TEACHER DCM

'The bag belongs to the teacher.'



[Figure 8] GESL NO/NOT

(16) *GESL*

BAG **BELONG NO/NOT** TEACHER DCM.

'The bag doesn't belong to the teacher.'

3.2. HKSL

In addition to attributive POSS, HKSL also expresses possession through a predicative POSS (cf. in English *the book is mine/belongs to me*, rather than *my book*). There are no phonetic differences in articulation for attributive POSS and predicative POSS, not even in terms of NMs (see Figure 4). Predicative possessive markers similar to HKSL POSS (cf. (18a-b)) are a common occurrence in many sign languages, as can be seen in the examples (17a-c) from LSC (Quer & GRIN, 2008), USL (Lutalo-Kiingi, 2008), and ASL (Abner, 2013; possessive markers in bold face).

(17) *LSC* (adapted from Quer & GRIN, 2008: 51, (81))

a. IX CAR **BELONG** BORONAT.

'That car belongs to Boronat.'

USL (adapted from Lutalo-Kiingi, 2008: 111, (4))

b. SAM **POSS** IX BOOK.

'That is Sam's book.'

ASL (adapted from Abner, 2013: 126, (2c))

c. BOOK$_i$ **POSS**$_i$ $_i$BRUNO

'The book belongs to Bruno.'

The word order of the HKSL predicative possessive marker is fixed: the possessed referent precedes the possessor referent, and POSS must follow the possessor, (18b). If the possessor noun is elided or implied by the locative agreement of POSS, (18a), POSS can occur independently.

(18) *HKSL*



a. BOOK IXa POSS$_1$.

'That book is mine.'

b. DOG BLACK FOUR IX$_a$ FATHER POSS$_3$.

'Those four black dogs are father's.'

Nevertheless, signers of HKSL who for different reasons (e.g., family or educational background) adhere to a word order that follows that of Cantonese (the ambient spoken language in Hong Kong, shown in (19a)) may also sign the

predicative possessive marker as follows, (19b):

(19) *Cantonese*

a.	本	書	屬於	Kenny.
	bún	*syū*	*suhkyū*	*Kenny*
	CL:volume	book	belong.to	Kenny

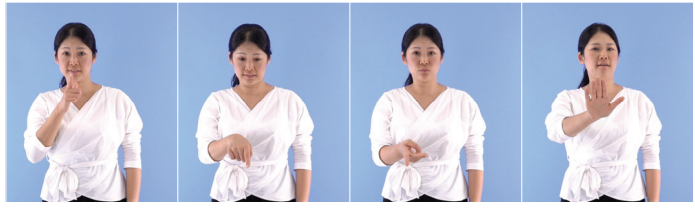
HKSL

b. BOOK POSS$_3$ KENNY.

'The book is Kenny's.'

The HKSL possessive marker lacks a plural form. The plural meanings of *ours*, *yours*(PL), and *theirs* are usually expressed through the use of plural pronouns (IX$_{PL}$) followed by the possessive marker, (20a). The possessive marker can also be modified with a distributive morpheme, (20b).

(20) *HKSL*



a. PEN IX$_a$ IX$_{dual}$ POSS$_2$.

'These pens belong to you two.'



b. POSS$_1$ NOT. POSS$_{3PL\text{-}DISTR.}$

'It's not mine, they belong to each of them.'

Data samples (20a-b) show that HKSL's predicative possessive marker may pluralise, no such pluralisation exists for its NP-internal POSS (Section 2.2.2 above). In contrast, the BSL and ASL NP-internal POSS do allow for pluralisation (cf. Figures 7 and 8 in Cormier & Fenlon, 2009: 398; Pichler & Hochgesang, 2008: 233, Appendix).

The HKSL lexical sign for verbal negation is NOT, see Figure 9. It is used to negate all HKSL verbs that do not have a distinct paradigmatic negation that is a single lexical item (i.e., partial suppletion).[9] As most other verbs, (21a-b), HKSL's predicate possessive marker POSS is negated by NOT, as shown in (21c-d).



[Figure 9] HKSL NOT

(21) *HKSL*

a. TOMORROW MEETING IX_1 **GO NOT.**

'I'm not going to tomorrow's meeting.'

b. WINE IX_1 **DRINK NOT.**

'I don't drink wine.'

c. CAR IX_a? IX_1 FRIEND $\mathbf{POSS_b}$ **NOT.**

'That car? That isn't my friend's.'

d. CAT MOTHER $\mathbf{POSS_a}$ **NOT.**

'The cat isn't my mother's.'

9) Many sign language modal and auxiliary verbs come in suppletive pairs such as HKSL CAN and CANNOT, but also a handful of non-auxiliary verbs, such as SEARCH and CANNOT-FIND.

NOT can also independently serve as the negation predicate for copula clauses:

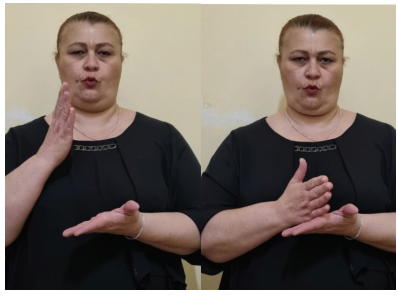
(22) *HKSL*

IX$_3$ IX$_1$ FRIEND **NOT.**

'She's not my friend.'

3.3. HAVE

Morgan (2008: 73) summarises the topic of verbal possession as follows: "(…) when it comes to expressing possession, there are 'have' languages and there are 'be' languages." Typologically, GESL and HKSL end up on the same side of this divide: both GESL and HKSL are "have-languages."



GESL HAVE



HKSL HAVE

[Figure 10] GESL and HKSL HAVE

3.3.1. GESL

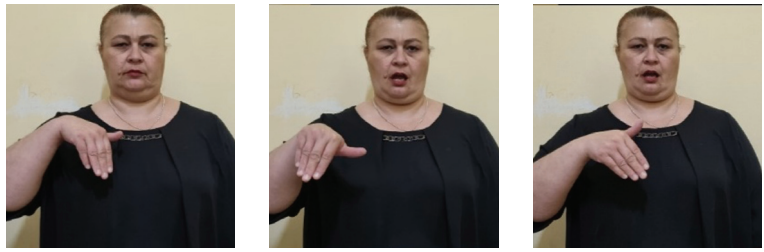
GESL HAVE is used in possessive as well as existential contexts and can therefore also be glossed as EXIST (see also Morgan, 2008). The "have/exist"-overlap is also found for USL HAVE (Lutalo-Kiingi, 2008), BSL HAVE (Cormier & Fenlon, 2009: 409), ÖGS DA (Schalber & Hunger, 2008), and NGT HEBBEN (Loos, 2012). The verb is a loan from Russian Sign Language (RSL). The use of HAVE to express possession is optional in GESL, (23), as it is in HKSL (see (22a-b)) and LSC (Quer & GRIN, 2008: 49, (68)).

(23) *GESL*

TEACHER (HAVE) BOOK.

'The teacher has a book.'

Despite GESL's possessive verb HAVE and existential verb EXIST having a shared origin in RSL and having no phonological distinction between them, there is a difference when it comes to negation. The same is true for BSL's negation of HAVE (possession) and HAVE (existential): the former is negated by HAVE-NEG$_{poss}$, whereas the general negation NOT-HAVE can negate both possessive and existential HAVE (Cormier & Fenlon, 2009: 409-410). The GESL negation of HAVE is a de-lexicalised form derived from the lexical adjective EMPTY[10], shown in Figure 11, and glossed as HAVE-NOT in (24). GESL's negation of HAVE by use of the derived form of EMPTY is comparable to USL NONE (Lutalo-Kiingi, 2008: 115-116, (25)).



EMPTY

[Figure 11] GESL negative possession

(24) *GESL*

IX$_1$ BOOK HAVE-NOT.

'I don't have a book.'

3.3.2. HKSL

In contrast to other sign languages that have multiple verbs that can express

10) GESL empty frequently occurs in compound nouns to express the absence of a certain quality or thing, e.g., GOD^EMPTY 'atheism' or HEART^EMPTY 'heartless.'

possession (e.g., Japanese Sign Language (NS) which uses HOLD, HAVE, and EXIST; Morgan, 2008) HKSL uses only the verb HAVE to express possession. Unlike "have-verbs" in many other languages (e.g., the aforementioned NS verbs or Spanish and Portuguese *tenor* 'have' which originates from latin *tenēre* 'hold,' Aikhenvald, 2013: 28), HKSL HAVE is not derived from any other verb meaning 'hold, acquire, grab,' and so on, and its sole purpose is to express possession.[11)]

As with the possessive marker discussed in previous sections, the verb HAVE links a possessed entity to a possessor. The possessions can be both alienable (25a) as well as inalienable (25b), as opposed to LSC where HAVE is only used for alienable possession (Quer & GRIN, 2008: 50). Note, however, that the use of HAVE is not obligatory. In this respect, HKSL resembles GESL, where overt HAVE is also optional.

(25) *HKSL*

a. DEAF COMMUNITY PROBLEM ALL-KINDS-OF (HAVE).
'The Deaf community has many different problems.'

b. IX_1 HOUSE ROOM THREE (HAVE).
'My house has three rooms.'

In contrast to POSS, HKSL HAVE cannot be negated by NOT. An example of the paradigmatic negation of certain HKSL verbs mentioned in is HAVE-NOT (i.e., partial suppletion) as the negation of HAVE (rather than HAVE^NOT), as shown in Figure 12. HAVE-NOT negates clauses that express possession through the verb HAVE, as shown in (26a-c).

11) Depending on the sociolinguistic background of HKSL signers, have is also used to express existence. According to Deaf consultants, this is due to influence from spoken Cantonese, where the verb 有 *yáuh* 'have' expresses both possession and existence. In native HKSL, HAVE is not lexically specified for the latter meaning. It should be noted, however, that this observation from Deaf consultants certainly holds true for late Deaf learners of HKSL and hearing L2 signers, but for a younger generation native Deaf signers who graduated from Hong Kong's bimodal bilingual (HKSL and Cantonese) education programme (SLCO) HKSL HAVE can indeed express both possession and existence. In other words, HKSL HAVE is currently subject of ongoing language change and the meaning of HAVE is expanding to include existential meaning in addition to its original possessive meaning.



[Figure 12] HKSL HAVE-NOT

(26) *HKSL*

a. IX$_1$ TOMORROW MEETING **HAVE-NOT.**
'I don't have a meeting tomorrow.'

b. IX$_1$ SISTER **HAVE-NOT.**
'I don't have a sister.'

c. HOUSE TOILET **HAVE-NOT.**
'[Our] house doesn't have a toilet.'

3.4. Interim discussion

3.4.1. Summary

Table 2 summarises how GESL and HKSL mark possession within the VP. Whereas NP-internal possession structures differed greatly between GESL and HKSL (cf. Table 1), predicative possessive structures align closely between the two languages.

[Table 2] Overview of GESL's and HKSL's VP-internal possessive structures

GESL	HKSL
BELONG	POSS
HAVE (negation: HAVE-NOT)	HAVE (negation: HAVE-NOT)

3.4.2. Agreement

Another aspect in which GESL and HKSL resemble each other is in how attributive GCM (GESL) and POSS (HKSL), and predicative BELONG (GESL) and POSS (HKSL) make use of spatial agreement (see also Section 2.3.2). Possessive

markers mark agreement with the possessor noun through spatial modification according to the (assigned) locus of the possessor. In other words, these markers are directed toward the possessor's locus, or, if a referent has not yet been assigned a locus, they can assign the referent a locus.

In (27), the index sign (IX_a) preceding POSS has already assigned a locus to the possessor DOG. However, if a referent is newly introduced into the discourse and has not yet been assigned a locus, POSS is the sign that can assign the referent a locus. There is no distinction between signs that are body-anchored (e.g., MOTHER) and signs that are produced in neutral space (e.g., DOG). In (28), POSS is directed to a locus 3b and thus assigns that locus to MOTHER for the remainder of the discourse.

POSS can also move between the locus of the possessed referent and the possessor referent and thus show agreement with both loci, as shown in (29). The possessed referent 'pile of books' is assigned locus 3a (IX_{3a}) and POSS assigns BRENDA locus 3b.

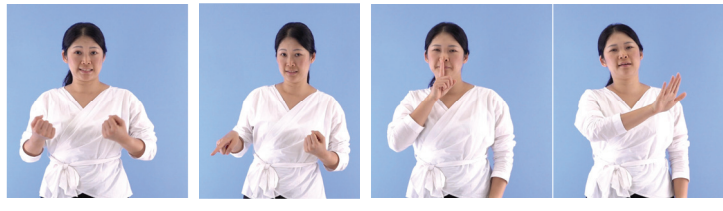
(27) *HKSL*



FOOD DOG IX_a $POSS_{3a}$

'That food belongs to the dog.'

(28) *HKSL*



CAR IX_a ? MOTHER $POSS_{3b}$

'That car? That belongs to mother.'

(29) *HKSL*



BOOK CL:pile IX_{3a} BRENDA $_{3a}POSS_{3b}$

'That pile of books belongs to Brenda.'

If the spatial agreement that sign language verbs express in verbal morphology and the use of referential loci is to be considered a form of complex morphology (see Section 5.3 below), then it should not be surprising that the word order of many sign languages is often flexible and favours information structure over adherence to canonical word order. GESL additionally has its various case markers that allow for GESL to have free word order.[12] GESL's BELONG employs possessed-BELONG-possessor (SVO) word order, as in (30). This contrasts with HKSL's possessed-possessor-POSS (SOV) word order (cf. (27) above).

(30) *GESL*

TABLE	BELONG	FATHER	DCMa
S	V	O	

'The table belongs to father.'

The difference between GESL and HKSL in terms of the surface word order of predicative possessive markers does not stem from typological differences in canonical word order, but from the absence of an agreement auxiliary from

12) *Rich morphology frees syntax*. The claim that GESL has free word order is based on consultations with native GESL signers. However, there exist no GESL corpora that can be used for a statistical analysis of whether certain word orders occur more frequently and can thus be considered "canonical." The building of such corpora will be an important goal of future GESL research. We understand that this constitutes a methodological limitation regarding the claim that GESL has free word order. For more detailed discussions on GESL word order, we refer to Makharoblidze (2012, 2025) and Power et al. (2025).

HKSL. For HKSL, canonical word order is SVO, however, SOV word order is shown to be employed more frequently for clauses involving agreement (Sze, 2015; similarly observed for ASL first by Fischer, 1975). Compare HKSL examples (31a), which contains a plain verb (i.e., a non-agreeing verb), and (31b), which contains an agreement verb).

(31) *HKSL*

a. IX_1 LIKE APPLE. SVO

'I like apples.'

b. $FATHER_a$ $MOTHER_b$ $_aIN\text{-}LOVE\text{-}WITH_b$. SOV

'Father is in love with mother.'

Lexical V stays in its original position for plain verbs, as in (31a), but V moves to v in case of agreement verbs, as in (31b) (Pfau et al., 2018: 20-21). As has been shown in the preceding, the HKSL possessive marker marks agreement with the possessor noun, both NP-internal as well as predicatively. SOV word order is thus derived by movement of V to v for the sake of agreement.

Assuming that GESL and HKSL are both underlyingly SVO languages,[13] HKSL predicative possession, SOV word order is derived through movement for the sake of agreement; whereas for GESL, canonical word order (SVO) is upheld. This is possible because the GESL DCM (see (4)) functions as an agreement auxiliary (similar to DGS' PAM; Rathmann, 2003). For GESL, V need not move to v as v can be realised by the DCM.

4. The semantics of possessive constructions in GESL and HKSL

From a cross-linguistic perspective, some deductions can be made about the

13) As mentioned in Footnote 12, a searchable GESL corpus will allow us to make a statistical analysis of the frequency of different word orders in natural GESL data. For the present paper, we rely on native signer consultations.

types of possessive relations that possessive structures express. Aikhenvald (2013: 3) lists three core meanings of possessive constructions:

(32) A. ownership e.g., *Mary's car*
B. whole-part relations e.g., *Mary's toe / the tip of the iceberg*
C. kinship e.g., *Mary's cousin*

Possessed referents in ownership relationships are generally considered to be alienable. In other words, Mary's car might be in Mary's possession at the moment, but the car can be dissociated from Mary, for example if she sells or loses it, or if it gets stolen. The car is not an inherent part of Mary: there is no permanent association between the possessed and the possessor. Many types of body part and kinship relations, however, are considered inalienable (e.g., Kliffer, 1996; Nichols, 1988, 1992, among others): the possession is obligatory. According to Aikhenvald (2013: 4), different populations of language users have different judgements about counts as alienable and what does not. As an example of this, Aikhenvald mentions that in languages of people with a maritime culture the word 'canoe' is considered inalienable.

Table 3 provides an overview of which of the linguistic means discussed in the preceding are used in GESL and HKSL to express ownership, whole-part relations, and kinship possessions. It shows that HKSL POSS in neither its attributive nor predicative form can give expression to whole-part relations.[14] This indicates that POSS cannot be used to denote a possessive relationship in which the possessed referent (e.g., a body part or a component) is an intrinsic part of the possessor (e.g., a person or a house). In other words, the semantics of POSS require possessed and possessor to be two separate and distinct entities (Aikhenvald, 2013: 5). Furthermore, as mentioned in Section 2, GESL BELONG only occurs in formal register, i.e., legal jargon. It makes sense that GESL BELONG therefore only occurs in ownership possession.

14) These observations were shared unanimously by the Deaf native HKSL consultants nor were any counterexamples observed in the HKSL corpus (Created by the Centre for Sign Linguistics and Deaf Studies: http://www.cslds.org/hkslcorpus/ at the Chinese University of Hong Kong).

An interesting observation that contrasts HKSL's and BSL's[15] and USL's use of the personal pronoun (IX) for possessive structures is that the latter two seemingly only allow for personal pronouns in possessive constructions of inalienable possession (Cormier & Fenlon, 2009: 405-406, (17); Lutalo-Kiingi, 2008: 117), whereas the former allows IX-possession for ownership, whole-part, and kinship possessions, in other words, for both alienable and inalienable possessions. Typologically speaking, similar observations have been made for languages like Nyangumarta and Udihe (Van Rijn, 2016: 238-239). In Nyangumarta, inalienable possessives make use of the personal pronoun, as shown in (33a), whereas alienable possessive require a genitive case suffix, (33b). In Udihe, a possessive infix is required for alienable possession, (34a), but a personal pronoun suffices for inalienable possession, (34b). In other words, alienable possessives are more overtly marked as a possessive (cf. sign language POSS).

(33) *Nyangumarta* (adapted from Sharp, 2004: 313, (9.53); 306, (9.22))

a. ngaju mùso
1SG hand
'my hand'

b. ngaju-mili japun
1SG-GEN joey
'my joey'

(34) *Udihe* (adapted from Nikolaeva & Tolskaya, 2001: 111; 112, (140))

a. ja: -ŋi -ni
cow -POSS -3SG
'his/her cow'

b. neŋu -ni
younger.sibling -3SG
'his/her younger sibling'

15) Though the authors admit that the degree of how systematic this distinction is in BSL should be subject to further investigation.

[Table 3] Overview of the linguistic means used by GESL and HKSL to express the three core meanings of possessive constructions

	GESL	HKSL
Ownership		
Attributive		
Case marker	FATHER TABLE GCM 'father's table'	X
	LETTER DOCTOR DCM 'a letter for the doctor'	X
Pronominal	$POSS_1$ HOUSE 'my house'	POSS/IX_1 HOUSE 'my house'
Nominal / Juxtaposition	X	FRIEND ($POSS_a$) CAR '(the) friend's car'
Predicative		
BELONG / POSS	CAR BELONG FATHER DCM. 'the car belongs to father.'	HOUSE BOSS $POSS_a$. 'the house is [my] boss'.'
HAVE	FATHER HAVE TABLE. 'father has a table.'	IX_1 TELEVISION HAVE. 'I have a television.'
Whole-part		
Attributive		
Case marker	TABLE GCM LEG 'the table leg'	X
Pronominal	PETER IX_a GCM_a NOSE 'Peter's nose'	IX_1 HAND 'my hand'
Nominal / Juxtaposition	X	HOUSE DOOR '(the) door of the house'
Predicative		
HAVE	$POSS_2$ HOUSE HAVE TOILET. 'Your house has a toilet.'	FATHER TAIL HAVE. 'Father has a tail.'
Kinship		
Attributive		
Case marker	FRIEND GCM MOTHER 'the friend's mother'	X
Pronominal	$POSS_2$ HUSBAND 'your husband'	IX_1 MOTHER 'my mother'
Nominal / Juxtaposition	X	FRIEND ($POSS_a$) MOTHER '(the) friend's mother'

	GESL	HKSL
Predicative		
BELONG / POSS	X	SON BOSS $POSS_{3a}$. 'the son is [my] boss.'
HAVE	IX_1 HAVE SISTER. 'I have a sister.'	IX_1 MOTHER TWO HAVE. 'I have two mothers.'

5. Typological discussion

5.1. GESL and HKSL: an intra-modal comparison

In the preceding, we have shown all the linguistic means that GESL and HKSL have available to express (or negate) possession. Despite the fact that GESL and HKSL are not historically related, they have many commonalities. For example, for both GESL and HKSL the NP-internal possessive marker (GCM/POSS and POSS respectively) and the predicate possessive marker (BELONG and POSS respectively) have minimal phonological and distributional differences, both intra- as well as cross-linguistic, as shown in Tables 4 and 5 respectively.

For GESL, NP-internal GCM and POSS and predicative BELONG only differ in NMs. For HKSL, NP-internal and predicative POSS do not differ in any regard. Cross-linguistically, the 1st person singular possessive marker ($POSS_1$) of both sign languages is indistinguishable for all phonological parameters save NMs. A -handshape, palm oriented towards the signer, and articulated on or moving towards the chest. It is in the 2nd and 3rd person ($POSS_{2,3}$) that a difference between GESL and HKSL emerges due to orientation and its influence on handshape. For HKSL POSS, the palm is consistently oriented towards the possessor-locus. For GESL, however, palm orientation is consistently towards the signer, which means that for 2nd and 3rd person possessors a phonological handshape-change for ease of articulation occurs and becomes , with the back of the hand oriented towards to possessor-locus.

[Table 4] Intra- and cross-linguistic phonological comparison of GESL and HKSL possessive markers

	NP-internal					VP-internal				
	handshape	movement	location	orientation	NMs	handshape	movement	location	orientation	NMs
GESL	1st: 2nd/3rd:	towards possessor's locus	1st: signer's chest 2nd/3rd: neutral space	1st: palm towards possessor's locus 2nd/3rd: back of the hand towards possessor's locus	lips slightly open	1st: 2nd/3rd:	towards possessor's locus	1st: signer's chest 2nd/3rd: neutral space	1st: palm towards possessor's locus 2nd/3rd: back of the hand towards possessor's locus	lips puckered and smack
HKSL		towards possessor's locus	1st: signer's chest 2nd/3rd: neutral space	palm towards possessor's locus	1st: mouth rounded 2nd/3rd: mouth open		towards possessor's locus	1st: signer's chest 2nd/3rd: neutral space	palm towards possessor's locus	1st: mouth rounded 2nd/3rd: mouth open

Table 5 shows the NP-internal and VP-internal word orders of possessive structures. Regarding NP-internal word order, a cross-linguistic and intra-modal comparison shows that the NP-internal word order of possessor-POSS(/GCM)-possessed − as observed in GESL and HKSL − has also been described for ASL, Croatian Sign Language (HZJ), and ÖGS (Pichler et al., 2008), BSL (Cormier & Fenlon, 2009: 401), ÖGS (Schalber & Hunger, 2008: 172), and NGT (Loos, 2012). In contrast, LSC (Quer & GRIN, 2008: 43, (36)) shows a reverse word order: possessed-DE-possessor.

In terms of VP-internal word order, a commonality between GESL and HKSL is that it is likely SVO word order that underlies the predicative possessive phrase (see Section 3.4.2). Since both sign languages' possessive markers mark agreement with the possessor-locus, the syntactic structure has to reflect such agreement processes. It is through these processes that a surface difference between GESL and HKSL occurs. HKSL predicative POSS moves from V to v for the sake of agreement (see Pfau et al., 2018) and thus ends up with SOV word order. GESL, on the other hand, does not require predicate BELONG to undergo such movement because its DCM can act as an auxiliary agreement marker in v, which allows belong to remain in V. Both sign languages negate

their predicative possessive markers by having the negation NO(T) follow the predicative possessive marker.

[Table 5] Intra- and cross-linguistic syntactic comparison of GESL and HKSL possessive markers

	NP-internal		VP-internal		
	agreement	**surface word order**	**agreement**	**surface word order**	**negation**
GESL	possessor's locus	possessor-GCM-possessed	possessor's locus	SVO	NO/NOT
HKSL	possessor's locus	possessor-POSS-possessed	possessor's locus	SOV	NOT

Regarding HAVE-possession and its negation, GESL and HKSL show no differences. Both have a paradigmatic negative verb HAVE-NOT (cf. (24) and (26) above). Though notably, GESL's HAVE can also express existence, in HKSL the verb HAVE is likely undergoing language change to express existence as well.

An interesting gap in the GESL possessive paradigm in comparison to HKSL is that index signs (IX) do not function as possessive pronouns (cf. HKSL (7)) nor is juxtaposition an acceptable means of expressing possession (cf. HKSL (9)). HKSL, on the other hand, lacks case markers.

Another interesting difference between both languages is that HKSL patterns with sign languages such as Kata Kolok and IPSL in that where overt deictic reference is omitted, pronominal possessors can be pragmatically inferred as either first person or second person, whereas in GESL, absence of overt reference to the possessor would lead to ambiguity.

5.2. Modality effects

We hope our GESL and HKSL data will be a valuable addition to the current discourse on possessive structures, both for intra- and cross-modal typological comparison. When doing cross-modal comparisons, it is common to discuss modality effects. Modality effects are, simply put, the influence that the language modality (visual or auditory) and the nature of the articulators

(hands/torso/head or mouth/larynx) have on the form of linguistic expressions. Zeshan and Palfreyman (2020) distinguish between relative and absolute modality effects. Relative modality effects refer to linguistic forms/structures that are more likely to occur in either modality. An example given by Zeshan and Palfreyman is negative affixation: common in spoken languages, but rare in sign languages (2020: 538). Absolute modality effects refer to linguistic forms/structures that could not possibly occur in either modality ("a priori ruled out" 2020: 543) or that have not been attested in either modality but could potentially be. An example given by Zeshan and Palfreyman of an absolute modality effect is the absence of the spatial distributive: found in most sign languages, unattested in spoken languages (2020: 540).

In the process of comparing GESL and HKSL data to available linguistic data, — both intra- as well as cross-modal — we found ourselves pondering the usefulness of the term *modality effects*. This is mainly because the idea that modality and the nature of articulators affect linguistic expression bears some semblance of circular reasoning: the difference in articulators means that sign and spoken languages look different and they look different because they have different articulators. That the nature of articulators affects linguistic form should be an obvious given and does not warrant the far-reaching consequences that researchers seek to attach to it. Take for example the "cognitive reasons" for modality effects that Zeshan and Palfreyman search but find difficult to posit and thus settle for the conclusion that there might simply different preferences for different structures depending on language modality (2020: 539). Of course sign languages make use of space and simultaneity since that is what is available to them. Similarly, spoken languages make use of sound and benefit from the smaller muscles of the speech organs to produce sequential structures more quickly. These "preferences" and "availability" are what is captured using the term relative modality effects. The preference for sign language to make use of the physical availability of space is also clear in the preceding discussion of possessive structures in GESL and HKSL. However, in light of this discussion, it is worth mentioning that BSL and Auslan have been documented to use a possessive marker equivalent to the English *'s*: a fingerspelled letter S cliticised to a noun (Cormier & Fenlon, 2009: 404). In other words, not all sign languages

use spatially agreeing possessive markers and snub sequential possessive markers.

As for so-called *absolute* modality effects, one cannot help but observe the one-sidedness with which these are discussed: the primary argument is that spoken languages cannot use grammatical space. All examples of absolute modality effects boil down to the availability of space and its grammatical function in sign languages. Do reverse absolute modality effects exist? What can spoken languages do that is *a priori* ruled out for sign languages? The only thing that comes to mind is use of sound, which directly relates back to the nature of the articulators. If the only absolute modality effect in existence only occurs in one direction (i.e., sign languages have "it" and spoken languages do not), how useful is a discussion of modality effects in cross-modal typological research? If there is only one absolute modality effect, does that mean that all other modality effects come down to preference?

In sign linguistics we often posit that sign and spoken languages have the same underlying structures and adhere to the same mechanisms. When a structure gets sent to PF, different modalities — or, more accurately, different languages — determine linguistic form. "Modality effects" are but a surface phenomenon. An underlying structure that asks for verb agreement might surface as a sentence with verb conjugation through suffixes in the case of a spoken language, but as spatial agreement in a sign language. The discussion of modality effects inadvertently teaches us to expect that all sign languages will behave uniformly, simply due to their shared modality. As we have shown in the preceding for possessive structures, despite their shared modality, GESL and HKSL differ in many respects, and they differ from other sign languages as well. Not to mention the diversity that exists in spoken languages (e.g., sticking with the example of verb agreement, this happens through affixation as in Dutch *ik geef* 'I give' – *hij geeft* 'he gives,' vowel change as in Hebrew אָכַל *aachal* 'he ate' – אֲכֹל *e'echol* 'eat!', or no verb conjugation at all as in Chinese).

As a matter of fact, a discussion of modality effects might distract us from the possibility that a given sign language might actually align typologically with a certain subset of spoken languages. This is, for example, what Koenders (2025) argues for the count-mass distinction in HKSL, namely that HKSL is a Type I language (i.e., a number marking language; Chierchia, 2010) in terms of

its count-mass distinction and thus resembles spoken languages such as English and Dutch more than its intra-modal counterpart ASL. ASL is, according to Koulidobrova (2021), a Type III language (i.e., a number neutral language). In Koulidobrova (2021) and Koenders (2025), the cross-modal comparison is based on structural similarities between languages, rather than the surface phenomena captured by modality effects. In their discussion of possession in BSL, Cormier and Fenlon pose a question that expresses a similar sentiment, namely: "Is possession expressed differently in signed languages due to the use of the visual-gestural (rather than the aural-oral) modality, or are patterns relating to possession essentially the same for signed and spoken languages?" (2009: 390).

5.3. Revisiting agreement

Let us linger on the topic of the only established absolute modality effect, namely grammatical use of space. Zeshan and Palfreyman's example of the distributive used in sign languages (2020: 540) misses the mark: spoken languages can have distributive markers on verbs as sign languages do. For example, the Czech distributive prefix *po-*, as shown in (35b) (Filip & Carlson, 2001: 423, (4)).

(35) *Czech*

a. při- nés- t^{P}
DIR- carry- INF
'to bring'

b. po- při- nés- t^{P}
DISTR- DIR- carry- INF
'to bring one after the other'

Whether it is in the form of a distributive infix or a spatially realised distributive, there is no structural difference between sign and spoken language. A seemingly better example of use of space that is unparalleled in spoken language might have been the use of referential loci for agreement, be it for

agreement verbs, classifier constructions, or simply anaphoric reference throughout a discourse. Nevertheless, this is again misleading. Naturally spoken languages can make anaphoric reference throughout a discourse. For example, several researchers working on classifier typologies have reported that in classifier languages classifiers perform a anaphoric "referent tracking" function (e.g., Downing, 1986; Allan, 1977; Greenberg, 1977; Croft, 1994; Aikhenvald, 2000, among others). Even when keeping the discussion of this topic within the context of possessive structures, languages such as Hmong and Cantonese (Pacioni, 1997) use classifiers to express possession, as shown in (36).

(36) *Hmong* (Bisang, 1993: 27, (50))

nws	tus	txiv ntxawn	tus	ntxhais
he	CL:living.being	uncle	CL:living.being	daughter

'the daughter of his uncle'

The anaphoric use of classifiers resembles the anaphoric use of referential loci because all lexical information about a discourse referent is assigned to a functional item that is otherwise meaningless, either the classifier or the locus in a sign space.

The use of index signs (IX) to point at referential loci can be interpreted as either pronominal or demonstrative. Demonstrative pronouns in spoken languages also serve anaphoric functions. Though, of course, the physical presence of a sign space allows for a fine-grained distinction between different referents and their respective locations, but there are also spoken languages that have demonstratives that try to make such distinctions. Enfield (2003) describes how Lao's demonstratives differentiate between a referent present and not present. In comparison to English *this* and *that*, languages like Japanese and Spanish differentiate three demonstratives, Quileute and Somali four, and Malagasy and Navajo have five or more (Peeters et al., 2021) based on factors like the proximity, visibility, specific geographical parameters (e.g., up/downhill, inland/seawards, etc.; Hyslop, 1993; Burenhult, 2008), or status of the referent. Croft (2003) discusses anaphoric demonstratives, which refer back to referents previously introduced in

a discourse. Croft (2003: 246) discusses that cross-linguistically, anaphoric demonstratives develop from deictic demonstratives, a function also performed by index signs in sign languages.

Moreover, studies have shown that speakers do in fact make use of the visual-gestural modality when making anaphoric reference. For example, Skilton (2024) observed that speakers of Ticuna made use of gestural strategies for anaphoric reference, including arm and pointing gestures, eye gaze, and head tilts, all towards discourse referents' contextually assigned locations. This shows that the use of physical space is not *absolutely* reserved for (reference tracking in) the sign modality.

Turning once again to possessive structures and the role of spatial agreement therein. We can fit the patterns observed in GESL and HKSL POSS in with existing spoken language data to get a typological picture without only labelling POSS's use of spatial agreement an absolute modality effect. We propose that the agreement patterns observed in GESL and HKSL POSS align with the process of grammaticalisation of possessive marking as proposed by Van Rijn (2016).[16] According to Van Rijn, bound agreement marks develop from independent pronouns along the following continuum:

(37) independent pronoun – weak pronoun – clitic pronoun – affixal agreement marker – fused agreement marker – ∅

(Van Rijn, 2016: 234, (1))

Agreement markers copy the information from the possessor noun to the possessed. A spoken language example given by Van Rijn (2016: 246) of a possessive marker with the person features from the possessor noun copied onto it comes from Ungarinyin, as shown in (38):

16) Van Rijn's analysis is based on a sample of 39 languages, all of them spoken languages. As helpfully pointed out by a reviewer, it would be worth investigating whether Van Rijn's proposed continuum would need to be adapted to account for sign languages' simultaneous morphological expression. Though this is beyond the scope of this paper, it is something we are interested in exploring in future research.

(38) *Ungarinyin* (Rumsey, 1982: 70)

(Gádbuŋu)	anàŋa	dámbun
gádbuŋu	3SG.M.POSS	country

'Gadbungu's country'

Sign language POSS markers show agreement with loci assigned to referents by independent pronouns (i.e., IX) through orientation and direction of movement. As described above, POSS, whether attributive or predicative, agrees with the possessor locus (cf. GESL (Figure 4a) and HKSL (23) above). Following Van Rijn's (2016) analysis, this would mean that the possessive agreement marks have affixed[17] to the sign POSS. That is, the orientation and movement parameters of the sign POSS are morphologically specified to show agreement with the possessor's locus.[18] In other words, the possessor's locus has been affixed to POSS. The agreement affixes are produced simultaneously with the sign POSS, as is the preference for sign language structures. Note, however, that even when limiting ourselves to the realm of possessive structures, sign languages are not unique in their use of simultaneous structures. For example, in first or second person possessor contexts, Ewe allows for juxtaposition between possessor and possessed by addition of a high tone (Ameka, 1996: 792, 801-802; Aikhenvald, 2013: 10).

Once a referent has been assigned a locus, POSS can mark agreement with that possessor referent without having to reiterate the possessor NP. This optionality in reiterating the possessor NP has been attested for spoken languages as well, for example in Nyulnyul, (39), and Burushaski (Van Rijn, 2016: 244).

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17) We would have liked for Van Rijn (2016) to provide a clear definition of the distinction between affixal and fused agreement markers, so that we could better argue whether possessive agreement in sign languages belongs to the former or the latter. As shown in the text, we have chosen to go with the affixal-stage interpretation of possessive agreement due to the phono-morphemic status of the five sign parameters (e.g., handshape, NMs, location, **orientation**, and **movement**) and affixes are clearly identifiable morphemes.

18) Taking into account the comment of Footnote 17, it should be noted that Nevins (2011) argues for a clitic analysis for sign language agreement.

(39) *Nyulnyul* (McGregor, 2012: 585)
(bin wamb) ni-mal
this man 3MIN.POSS-hand
'this man's hand'

In short, if we got rid of the notion of modality effects, the strategies that sign languages use for possessive structures only differ from those used in spoken languages on the surface. GESL's genitive and benefactive cases and HKSL's personal pronouns and juxtaposition all occur in spoken languages as well (Aikhenvald, 2013).

6. Conclusion

In this paper, we described the linguistic means of expressing possession of two historically unrelated sign languages, namely GESL and HKSL. The possessive structures of both these languages were compared intra- and cross-modally for typological purposes. In doing so, we hope to contribute the linguistic data of two smaller sign languages to the existing body of studies that exist on sign language possessive structures (e.g., Zeshan & Perniss, 2008).

According to our data, GESL predominantly uses a genitive case marker to for NP-internal possessive structures. Predicatively, GESL uses the verb HAVE. GESL has a verb BELONG which is derived from its possessive pronoun POSS, but both are rarely used outside of formal contexts. HKSL can mark possessive structures in a myriad of ways within the NP, namely through personal pronouns, a possessive marker POSS, nominal possessives, and juxtaposition. In the predicate, HKSL uses predicative POSS or the possessive verb HAVE. Spatial agreement with the referential loci assigned to the possessor referent play an essential role in the possessive structures of both languages.

We have argued to relinquish the discussion of modality effects in favour of analyses of the structures that underlie the modality preferences or the influence of articulators seen in the surface manifestations of languages. We have argued

that GESL and HKSL NP-internal word order is identical, namely possessor-POSS/GCM-possessed. This is because GESL GCM and HKSL POSS occupy the same syntactic position: head of PossP. The possessor nominal originates in Spec,PossP and moves to Spec,DP to generate the definitive reading. We also argue that each N^0 has a locus-feature (locφ) for its referential locus in the signing space. $Poss^0$ agrees with the locφ of the possessor noun, which it is c-commanded by. Regarding VP word order, we argued that GESL "possessed-BELONG-possessor (SVO)" and HKSL "possessed-possessor-POSS (SOV)" are derived from the same structure. HKSL's SOV word order is derived by movement of V to v for the sake of agreement. For GESL, V need not move to v as v can be realised by the DCM. In other words, the difference between GESL and HKSL in terms of the surface word order of predicative possessive markers does not stem from typological differences in canonical word order, but from the absence of an agreement auxiliary from HKSL. Finally, we have argued that the spatial agreement observed in POSS fits in with Van Rijn's (2016) analysis of possessive markers: the orientation and movement parameters of the sign POSS are morphologically specified to show agreement with the possessor's locus. In other words, the possessor's locus has been affixed to POSS and have become affixal possessive markers.

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