SELECTED TOPICS IN SLOVENIAN SIGN LANGUAGE LINGUISTICS: FROM MINIMAL PAIRS TO QUESTION FORMATION

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Abstract: *Minority languages are often given less importance than national languages, especially when the languages differ in their modalities. In addition, the hearing majority often do not recognise sign languages, leading to prejudice and discrimination against them. Apart from the theoretical relevance of the study of sign languages for linguistic research, linguistic studies have proved crucial in reducing the social and cultural isolation of Deaf communities. At the same time, the specific sociolinguistics of sign languages must be considered when conducting such linguistic research. This paper presents relevant background information that needs to be considered when conducting research on the grammar of Slovenian Sign Language (SZJ), as well as the research topics in SZJ linguistics that have been addressed in recent decades.*

Keywords: *Slovenian Sign Language, sign language linguistics, phonology, verb classes, agreement, classifiers, sign order, negation, questions*

1. INTRODUCTION

It was not until the linguistic study of American Sign Language by Stokoe (1960) that sign languages were recognised as natural languages. The interest of linguists in sign languages gradually increased, although grammatical knowledge of individual sign languages often remains fragmented. Information on the grammar of sign languages are often incomplete, unreliable, and appear only in very few scientific publications. Unfortunately, this is still the case with Slovenian Sign Language (SZJ).

The main aim of this paper is to present the current state of research on SZJ. Section 2 provides a description of relevant sociolinguistic facts about SZJ, including the acquisition of this language (Section 2.1), the school system (Section 2.2), and the legal status of the language itself (Section 2.3). Section 3 presents the linguistic tools and resources used in SZJ: dictionaries, teaching materials, scientific and popular publications from the pioneering period to modern linguistic research. Finally, Section 4 provides a brief overview of the phonological (Section 4.1), morphological (Section 4.2), and syntactic (Section 4.3) topics studied so far in SZJ.

2. SOCIOLINGUISTICS

2.1 SZJ acquisition

Deaf people are usually born into hearing families, and their relatives are rarely able to communicate with them fully using sign language (Costello et al., 2008). Consequently, most SZJ signers are (i) familiar with spoken Slovenian, at least to some extent, and (ii) start acquiring SZJ relatively late in life, typically when they are involved in an institutional/school setting. This is because no systematic attempt has been made in Slovenia to provide deaf babies and children who are born in hearing families with sufficient SZJ input in order for them to be able to acquire SZJ as their first language (L1). In fact, they often struggle to acquire any language because the spoken language they are normally expected to learn in an inclusive setting (Slovenian) requires a great effort. Acquiring language through an impaired

channel, such as the phono-acoustic modality, significantly delays the acquisition process (for a review see Chen Pichler, 2012). Despite significant research studies emphasising the importance of early exposure to a sign language for the development of a Deaf identity, language, and general cognitive systems (e.g., Foster, 1998; Breivick, 2005; Nikolaraizi and Makri, 2005), oralist practices still take place in Slovenia.[1] Since the Milan Conference (1880), when sign languages were banned from public schools and special educational institutions, oralism has been the main educational method in Slovenia, as well as in many other European countries.

2.2 Schooling

Currently, deaf children in Slovenia can attend either mainstream schools or institutions specialising in programmes for the deaf and hard of hearing, as well as programmes for hearing children with various speech, language, and communication disorders. The only institution where the learning processes take place simultaneously in Slovenian and in SZJ is the Institute for the deaf and hard of hearing in Ljubljana (one of three Slovenian institutions for the deaf). Teachers of deaf classes are required to attend SZJ courses, but they are usually not very proficient users of sign language. Therefore, the classes are held in Slovenian and a certified hearing/deaf interpreter is used as a communication assistant during the learning process. It should be noted that SZJ is taught as a compulsory subject in both primary and secondary schools with regular and special education, but only to a much lesser extent than Slovenian and a second oral foreign language (mainly English). Moreover, the lack of relevant materials for learning SZJ as L1 has a great impact on the sign language competence of the deaf who cannot be exposed to SZJ in their everyday life via their parents or family members. After primary school, deaf students can continue their education in a special vocational school where they can learn how to become either a computer technician, textile technician, wood or metal technician, culinary assistant, or graphic or multimedia technician. Deaf people must choose a mainstream institution if they opt for another profession. According to the Act on the Use of Slovenian Sign Language (2002), they have the right to enrol in any secondary school and university, as well as to use simultaneous interpretation services to follow the programme.

2.3 Legal status

The Act on the Use of Slovenian Sign Language (2002) has recognised that SZJ is one of the indigenous languages in Slovenia and institutionalised the right of the Deaf to use SZJ through the interpreting service in all public situations (the costs for interpreting services are covered by the Slovenian government). In addition, all registered Deaf citizens receive 30 interpreting vouchers per year (students receive 100 per year). Each voucher covers one hour of interpreting and the interpreter's travel expenses. These vouchers can be spent for public or private purposes. Since the voucher system is only for Deaf signers, it provides the most accurate number of active SZJ users. According to the SZJ Interpreters Association (personal communication), a total of 1044 Deaf signers were registered in the voucher system in 2021.[2]

However, not all institutions (in the medical, social, administrative, and educational fields) comply with the above-mentioned rights of the deaf community, either because they are not aware of the law or because they do not have the means to bear the increased additional costs. In addition, the body designated in the law as the decision maker for SZJ language policy has never actually begun planning for SZJ. To solve these problems, a new Article 62a was recently added to the Constitution of the Republic of Slovenia (Official Gazette of the Republic of Slovenia, 2021:92): "*The*

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[1] A term "deaf" printed with a lowercase indicates people with profound hearing loss, while the term "Deaf" with a capital letter indicates deaf communities that share a common culture and a sign language.

[2] A total of 1000 deaf SZJ signers were also reported by Ethnologue (2021) and by the European Union of the Deaf (2021, https://www.eud.eu/).

free use and development of Slovenian Sign Language is guaranteed. In the areas of municipalities where Italian or Hungarian are also official languages, the free use of Italian Sign Language and Hungarian Sign Language is guaranteed. The use of these languages and the status of their users is regulated by law. The free use and development of the language of the deaf-blind is regulated by law.". The relevant government agencies and working bodies are currently taking all necessary steps to implement the constitutional rights of users of sign and tactile languages in Slovenia.[3]

3. HISTORY OF SZJ RESEARCH

Informal descriptions of certain aspects of SZJ began to appear in the early 1990s. After the first two SZJ textbooks (Podboršek and Moderndorfer, 1990; Podboršek, 1992), the new generation of SZJ textbooks (Podboršek and Krajnc 2006, 2010, 2013, 2014) was published along with three picture dictionaries (Podboršek 2010, 2013, 2015). In all these publications, only the basic linguistic phenomena were mentioned and the focus was rather on the presentation of the core vocabulary. In 2003, the first multimedia Slovenian-SZJ dictionary was created (Žele and Bauman, 2003), which eventually developed into a growing online Slovenian-SZJ dictionary.[4] Sporadic observations and documents on SZJ development (e.g., Bauman et al., 2009) were mainly written by SZJ teachers and interpreters, speech and language therapists, and sociologists as they tried to develop their professional methods. For the most part, these authors were not trained as linguists (and certainly not as sign language linguists) and they did not adhere to the methods of linguistic fieldwork: the methodology used and provenance of data are often not provided, nor are references to primary sources. Moreover, their contributions were largely written for the purpose of informing the public.

Academic research has been conducted mainly within the framework of sociolinguistics (e.g.,

Kogovšek, 2007), languages in contact, and the comparison between SZJ and spoken Slovenian from the perspective of spoken languages (Bešter, 1994; Globačnik, 2001; Košir, 2004). The comparison between SZJ and Slovenian has often been indiscriminate and may therefore also contribute to a stronger influence of Slovenian on SZJ, for example, by pursuing word-by-word interpretations, extensive borrowing, and loan translations. In addition, scholarly work has focused on language planning (Žele and Bauman, 2011) and literacy among the deaf population (Kuplenik, 1999; Pfifer, 2016).

As a result of a research project, *The SIGNOR Corpus of SZJ* was compiled with annotated examples of SZJ discourse (Vintar et al., 2012; Vintar, 2015).[5] Approximately 20-minute conversations with 80 signers were filmed and transcribed using iLex technology (Hanke, 2002) and the HamNoSym transcription system (Hanke, 2004). Signs were segmented only with respect to the manual component of the sign - the non-manual component was neglected and not included in the glossary. After the end of the project, the corpus was not used for academic research due to lack of human and material resources. Currently, its availability is limited as search engines are not regularly updated.

In 2016, Pavlič provided the first formal description of (part of) the SZJ grammar, including word order and verb-argument agreement system in transitive, ditransitive, classifier, and locative constructions. It was shown that SZJ displays many general word order tendencies that have been reported for human languages in general and for sign languages in particular.

In 2019, a popular 'Handy video grammar of Slovenian Sign Language' was produced (Pavlič, 2019).[6] It contains 49 video clips with a total duration of 5 hours and 46 minutes and presents eight

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[3] Sign language is not an accessible means of communication for deaf and blind people. Tactile sign languages are an attempt to overcome this obstacle by using the haptic channel.

[4] https://szj.si/

[5] The project was funded by the Slovenian National Research Agency (ARRS) (Project code J6-4081; Duration 07.2011-06.2014; http://lojze.lugos.si/signor/en.html)

[6] The project was carried out by the Deaf and hard-of-hearing clubs association of Slovenia and co-financed by the Republic of Slovenia and the European Union under the European Social Fund (Duration 01.2018-08.2019).

linguistic chapters (phonology, morphology and sign formation, agreement, classifiers, sign order, locative expressions, negation, and question formation), as well as one general topic on writing and using reference grammar.[7] The publication is open source, available both in SZJ and Slovenian, is based on research conducted by Pavlič (2016), and includes examples of SZJ in use.

Kulovec (2020) is a recent study of the first deaf SZJ signer to earn a PhD. It is a study of the views of various participants on SZJ interpreting in a school setting. It identifies factors that influence deaf students' understanding and perception of learning materials, as well as the interpreting strategies most commonly used by SZJ interpreters in an educational context.

4. SZJ GRAMMAR – STATE OF THE ART

4.1 Phonology

Signs are the minimal lexical units of sign languages, including SZJ, and can be produced by one hand (example 1a from SZJ) or by both hands (examples 1b and 1c from SZJ).[8] In past, various terms have been used for the two hands in SZJ linguistics. For example, Podboršek and Krajnc (2010) distinguished between a 'dominant hand' and an 'auxiliary hand', while Podboršek and Krajnc (2013) referred to them as 'passive hand' and 'active hand'. Note that this article uses the terms dominant hand (H1) and non-dominant

hand (H2). Podboršek and Krajnc (2013) also distinguished between two-handed signs as follows:

- Symmetrical two-handed signs: both hands have the same handshape and the same type of movement as in (1b)
- Asymmetrical two-handed signs: the immobile non-dominant hand represents a place of articulation for the dominant hand as in (1c), the hands can take different handshapes.

(1)   a. VISIT   b. BOOK   c. ICE   SZJ
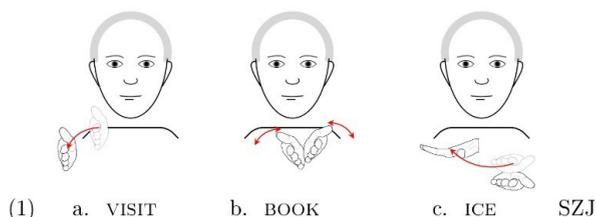
Signs are predominantly produced in the signing space, which is commonly understood as a three-dimensional space from the top of the head to the hip in the transverse (axial) plane of the human body, delimited by the end of the outstretched arms in the frontal (coronal) plane of the human body, as well as by the width of the outstretched arms in the lateral (sagittal) plane of the human body. The signer's body is also considered part of the signing space, while the area immediately in front of the signer's chest is referred to as the neutral signing space (e.g., Emmorey, 2002; Perniss, 2007). Podboršek and Krajnc (2013) were the first to define the signing space for SZJ, but they did not elaborate on its linguistic use.

In his work on American Sign Language, Stokoe (1960) discovered a sublexical structure of signs. Based on a number of other studies (e.g., Battison, 1978; Boyes Braem, 1995; Brentari 1998), five phonemic groups of features (parameters) were identified, including *handshape* (configuration of selected and non-selected fingers), *place of articulation* (where the sign is produced), *movement* (how the articulators move), *orientation* (the hands' relation towards the place of articulation), and *non-manual markings* (facial expressions and head and body movements) (Brentari, 2012:22). As for SZJ, all SZJ textbooks (Podboršek and Krajnc 2006, 2010, 2013, 2014)

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[7] https://www.youtube.com/channel/UC6cl7qGLmD70R8pb-Pn5Erpw/featured

[8] In this study, I adopted a common notational convention used in sign language literature according to which manual signs are glossed by a literal translation printed in English UPPER CASE (in the examples, as well as in the text). Indexes are used to refer to locations in signing space. To a gloss that refers to a referent signed in location 'a', a subscripted letter is attached (e.g., NOUN$_a$). To a gloss that refers to an agreeing verb that connects two referential locations 'a' and 'b', two subscripted letters are attached (e.g., $_a$VERB$_b$). Furthermore, I created the pictograms included in this paper using the SignDraw LaTeX package that was developed by Sašo Živanović within the project 'Handy video grammar of Slovenian Sign Language'. S=subject, O$_i$=indirect object, O$_d$=direct object, IX=index sign, CL(handshape)=classifier, H1=dominant hand, H2=non-dominant hand.

mention the existence of four manual parameters in SZJ signs (handshape, movement, orientation, and place of articulation), but do not provide evidence for their distinctive features in SZJ. Bauman et al. (2009:10) discussed the four parameters further, arguing that "*modifying one of these parameters is sufficient to change the meaning of a sign*". This is the first study using the minimal pair method in SZJ to define distinctive phonological features in this language. However, an example of a minimal pair is presented only in Žele and Bauman (2011:580). Finally, Pavlič (2019: 16-17) provided examples of minimal pairs for each of the four manual parameters, three of which are reprinted in (2).

- Signs (2a) and (2b) have the same handshape, movement, and orientation, but differ in their place of articulation, which in turn changes the meaning of these signs: HEAR is signed at the signer's ear, while SOUR is signed at the signer's mouth.

- Signs (2b) and (2c) have the same handshape, orientation, and place of articulation, but differ in their movement, which in turn changes the meaning of these signs: SOUR is signed with repeated straight movements toward the signer's mouth, while BISCUIT is signed with repeated circular movements created by a rotation of the wrist.

- Signs (2c) and (2d) have the same orientation, place of articulation, and movement, but differ in their handshape, which in turn changes the meaning of these signs: BISCUIT is signed with the ⍟-handshape,

while NUT is signed with the ⍦-handshape.[9]

To convey linguistic information, sign languages not only employ hands, but also facial expressions, as well as head and body postures, also known as non-manual markings. The use of non-manual markings can also change the meaning of a sign. For SZJ, this has been noted by Žele and Bauman (2011:580) who claim that "*facial expressions and body postures also contribute to the meaning of the sign*". Bauman et al. (2009:10) also argued that "*four elements form a sign that can only express a particular meaning in conjunction with facial expression and body posture.*". Pavlič (2019) provides a minimal pair showing non-manual markings can be phonemic: the sign ORANGE with neutral facial expression denotes either the orange colour or the familiar fruit of the same colour, while the same sign denotes lemon when non-manual markings are added (i.e., cheeks sucked in and squinted eyes).

4.2 Morphology

4.2.1 Sign formation

As in any other language, the relationship between the form and meaning of signs in SZJ can be arbitrary. However, there are also many signs where there are direct correspondences between form and meaning. Building on Battison (1978), Pavlič (2019) pointed out three ways in which sign formation can proceed in SZJ. Signs can be formed under the influence of visual modality (iconic motivation), under the influence of foreign languages, or without a clear influence (the core vocabulary). Signs formed under the influence

(2)   a. HEAR   b. SOUR   c. BISCUIT   d. NUT   SZJ

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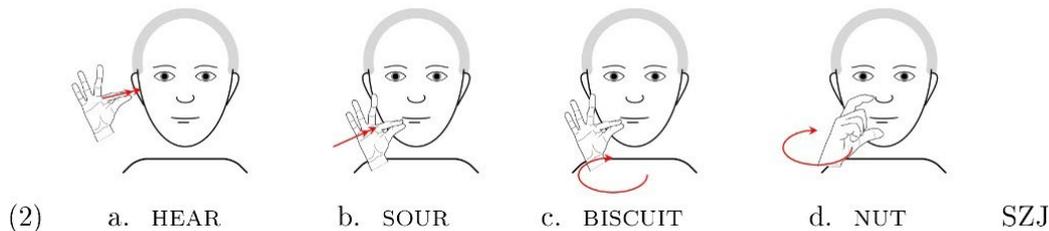
[9] The shareware Gallaudet Regular font used in this article was created by David Rakowski.

of a spoken language, usually the surrounding spoken language, are referred to as 'borrowings' from spoken languages. Such an example is provided in (3a), which is signed with a ✋-handshape corresponding to the letter "v" in a Slovenian translational equivalent (e.g., Slovenian: "vino" ("wine")). In the target sign language, systematic changes due to phonological processes can sometimes be observed in borrowed signs. For example, many SZJ signers produce the sign for "wine" with a ✋-handshape (3b), since ✋-handshape and ✋-handshape are not distinctive features unless they are iconically motivated.

(3)   a.   WINE1   b.   WINE2   SZJ
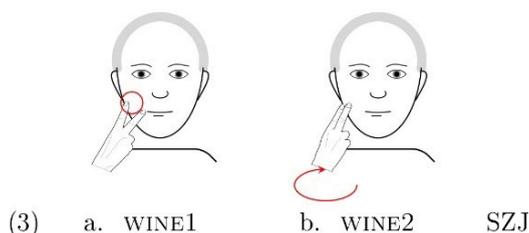
4.2.2 Nouns

The place of articulation subcomponent of SZJ nouns can be either lexically valued relative to a specific part of the body (body-anchored signs) or unvalued (space-anchored signs).
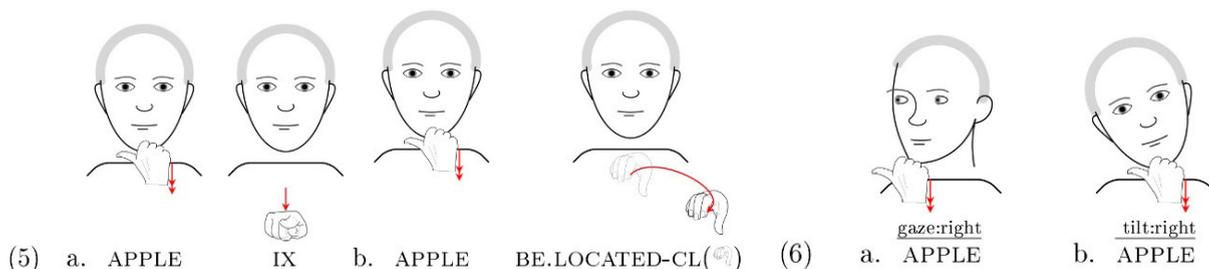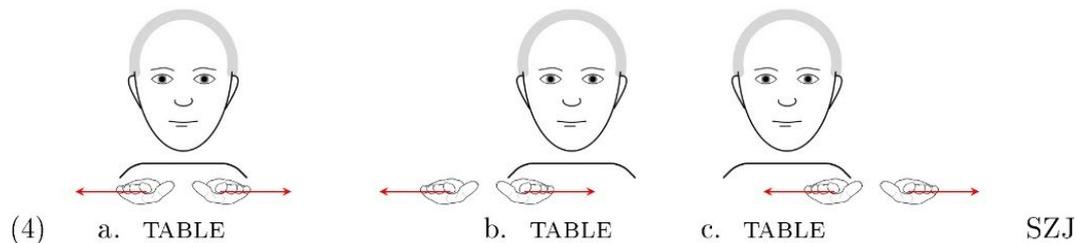
When a noun with a lexically unvalued place of articulation is produced without linguistic or extralinguistic context, it is localised in the neutral signing space immediately in front of the signer's chest (4a). When such a space-anchored noun is produced in a linguistic context, it may get localised in a specific location in the signing space (4b and 4c).

SZJ body-anchored nouns such as APPLE in example (5) can also be localised indirectly (Pavlič 2016, 2019): they can be combined with an index sign (glossed as IX) that refers to a specific location (5a), or with a space-anchored sign (such as a classifier verb BE.LOCATED-CL) that is signed at a specific location (5b). Note that body-anchored signs may also be associated with a specific location by simultaneous non-manual markings: gaze direction (6a) or head/body tilt (6b).

4.2.3 Verbs, aspect, and tense

In natural languages, each sentence is interpreted with respect to when and how it evolved. Time and aspect are usually marked either by free functional elements or by modulations of the verb. In sign language research, Fischer (1973) and Klima and Bellugi (1979) were the first to observe 15 manners of movement (such as reduplication, rate of signing, tension, and pauses between reduplication cycles) and relate them to aspectual modulations of a verb sign in American Sign Lan-

(4)   a.   TABLE   b.   TABLE   c.   TABLE   SZJ

(5)   a.   APPLE   IX   b.   APPLE   BE.LOCATED-CL(🖐)   (6)   a.   gaze:right
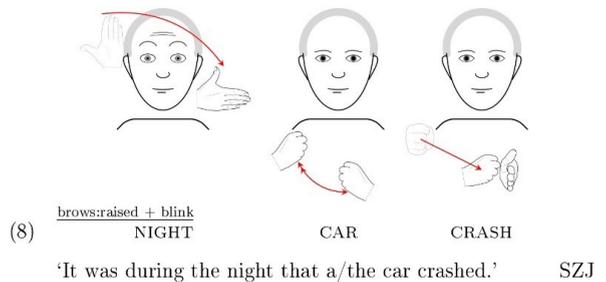APPLE   b.   tilt:right
APPLE

guage. Given considerable overlap in the meaning and form of some of the proposed aspectual types, later studies have attempted to reduce their number (e.g., Anderson, 1982; Wilbur, 1987). More recently, Rathmann (2005) distinguished six aspectual morphemes in American Sign Language: five of them bound (involving aspectual modulation – continuative, iterative, habitual, hold, and conative), and one free (a particle sign FINISH).

For SZJ, it has also been established (Pavlič, 2019) that a verb sign can inflect for grammatical aspect and that aspectual information is encoded with different types of repetitions of the movement (i.e., reduplications). One realisation of verbal movement is understood as a neutral perfective form (7a), while other aspectual forms are derived via reduplications. Multiple identical realisations of the verbal sign (7b) at the same location constitute an imperfective form (with continuative, habitual, or iterative meanings such as "someone influences again and again"). Ordered reduplications along an arc movement at successive locations in front of the signer (7c) receive a distributive perfective interpretation ("someone influenced many entities"). Alternating two-handed reduplications of verbal movement at many locations (7d) combine the distributive reading with the continuative, habitual, or iterative meaning (e.g., "someone influences many entities again and again").

It is not uncommon for verbs in spoken languages to inflect for tense. In sign language, tense inflection is almost unattested (Friedman, 1975; Cogen, 1977). Instead, the event time is expressed by time adverbials, which are usually placed at the beginning of a sentence, as seen in Spanish Sign Language (Cabeza Pereiro and Fernández

Soneira, 2004). Time adverbials can either denote a specific point in time (YESTERDAY or TOMORROW in SZJ) or locate the event more broadly in the past or future (such as the adverbial PAST or FUTURE in SZJ). Note that the use of a time adverbial is not obligatory in a SZJ sentence: when telling a story, it is sufficient to define the time of the event at the beginning of the story, and it is not necessary to repeat it in each subsequent sentence. Time adverbials are usually topicalized in SZJ: they are fronted, separated from the rest of the sentence by an eyeblink, and marked with raised eyebrows, as seen in example (8). These observations are consistent with reports from many unrelated sign languages, for example Greek Sign Language (Sapountzaki, 2005).

(8)   brows:raised + blink
           NIGHT   CAR   CRASH

'It was during the night that a/the car crashed.'   SZJ

4.2.4 Classifiers

Virtually all sign languages studied so far use iconic signs and handshapes. A subtype of iconic handshapes refers to entities by categorising them according to their salient properties: being an entity (a human, an animal, or a vehicle), being part of a body/entity, having a certain size and shape, or being manipulated by an entity. Collectively, these forms are referred to as classifiers. Classifiers are combined with a verbal movement subcomponent, which iconically represents the motion of

(7)   a. INFLUENCE   b. INFLUENCE   c. INFLUENCE   d. INFLUENCE   SZJ
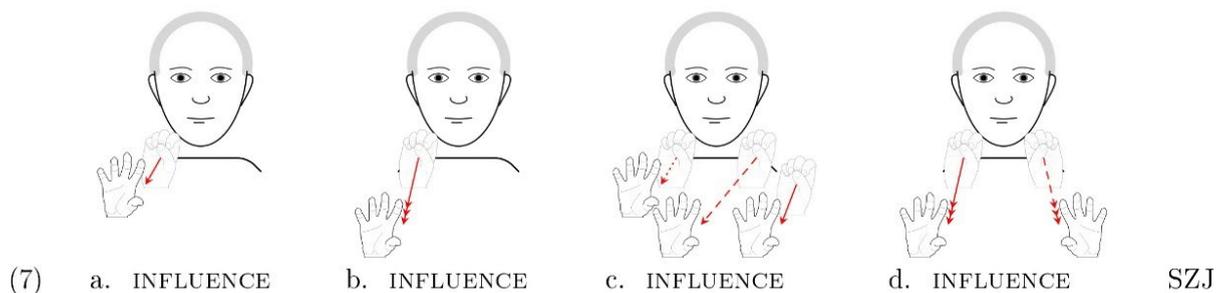
the classified entity, to form classifier predicates (e.g., Supalla, 1986; Zwitserlood, 2003; Benedicto and Brentari, 2004). According to Benedicto and Brentari (2004) classifier predicates in American Sign Language are syntactically divided into three groups: whole entity classifiers are projected in an unaccusative structure, body part classifiers in an unergative structure, and handling classifiers in a transitive structure.

Following Supalla (1986) and subsequent cross-linguistic research on sign languages, Pavlič (2016) distinguished between three categories of classifier predicates: whole entity, body part, and handling classifier predicates and showed that all three occur in SZJ.

4.3 Syntax

4.3.1 Verb classes and agreement

In sign languages, there are two verbal categories in terms of their movement subcomponent. Verbs can be characterised by a path movement from one location in space (starting point, e.g., 'a') to another location in space (ending point, e.g., 'b'), and is conventionally glossed as $_a$VERB$_b$. These two locations are not valued in the lexicon, but are copied from the two verbal arguments (e.g., Meir 1998, 2002). In addition to the direction of movement, the orientation of the hand also marks the verb-argument relationship, since the hand faces the argument realised at the endpoint of its movement (e.g., Aronoff, Sandler and Meir, 2005; Lillo-Martin and Meier, 2011). In this way, the formal properties of verbs (orientation, starting, and ending point) converge with the properties of the arguments they license. Since their form changes depending on their arguments, these verbs are considered as overtly agreeing verbs. On the other hand, there are verbs that lack path movement and/or hand orientation change, i.e., they cannot adjust their form to the place of articulation of their arguments. For these verbs, it is not possible to observe overt manual verb-argument agreement. They are therefore referred to as non-agreeing or plain verbs. This pattern was first described by Padden (1983) for ASL and soon extended to most sign languages studied so far – see,

among others, Massone and Curiel (2004) for Argentinian Sign Language, Johnston et al. (2007) for Australian Sign Language, Quadros (1999) for Brazilian Sign Language, Sutton-Spence and Woll (1998) for British Sign Language, Quer and Frigola (2006) for Catalan Sign Language, Rathmann (2000) for German Sign Language, Sapountzaki (2005) for Greek Sign Language, Zeshan (2000) for Indo-Pakistani Sign Language, Meir (1998) for Israeli Sign Language, Fischer (1996) for Japanese Sign Language, Hong (2008) for Korean Sign Language, Bos (1994) for Sign Language of the Netherlands, and Smith (1990) for Taiwanese Sign Language.

Pavlič (2016) followed the seminal work of Padden (1983) and subsequent cross-linguistic literature (Bahan, 1996; Fischer, 1996; Neidle et al., 1996; McDonnell, 1996; Cormier et al., 1998; Meir, 2002; Sapountzaki, 2005; Rathmann and Mathur, 2007; Lillo-Martin and Meier, 2011) in order to classify SZJ verbs based on their ability to express agreement manually. It turned out that, like most sign languages, two main verb classes can be formed: non-agreeing and agreeing verbs.[10] As expected, SZJ verb-argument agreement is realised through the linguistic use of space. Arguments are conventionally assigned locations in the signing space, and agreeing verbs move towards or orient to these points to show agreement with their arguments. Contrary to many sign languages researched so far, in SZJ, agreement verbs agree both with animate (9a) and inanimate (9b) participants. In example (9a), the agreeing verb VISIT begins in the location where the subject NEIGHBOUR was signed and ends in the location where the direct object CHILD is subsequently signed. In example (9b), the agreeing verb BAKE begins in the location where the subject NEIGHBOUR was signed and ends in the location where the direct object CAKE is subsequently signed. Non-agreeing verbs, such as LIKE in SZJ example (9c), do not agree with their arguments. In such sentences, an optional functional sign (glossed AUX) can be
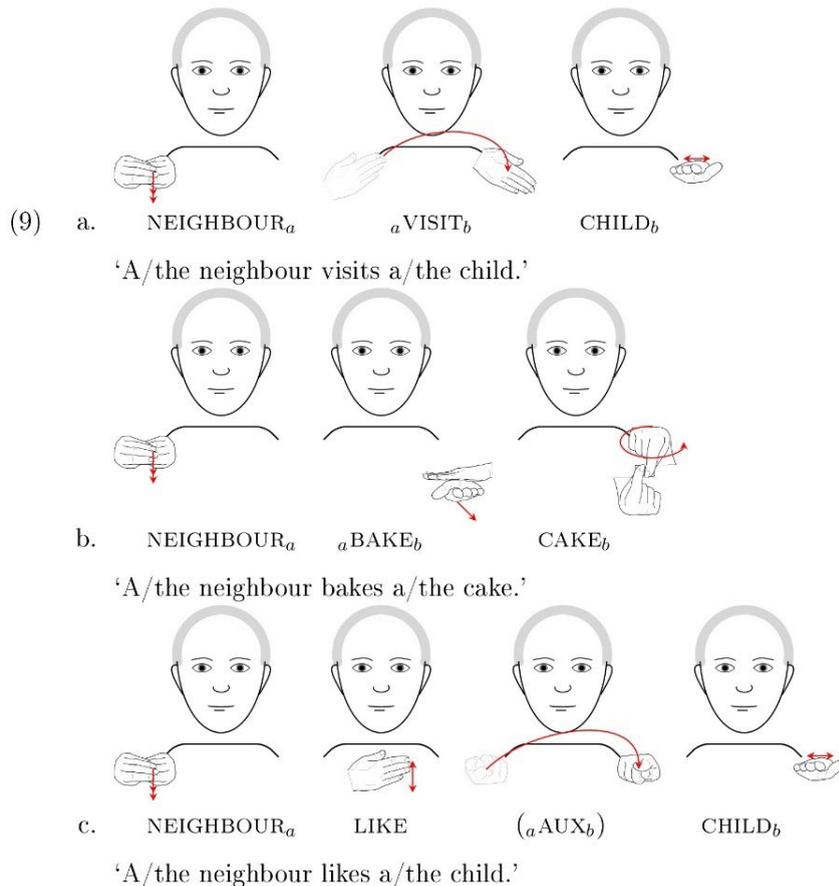
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[10] Similar to agreeing verbs, which denote the transfer from one thematic argument to another, spatially agreeing verbs denote the movement between the two locations they license. They have not yet been explored in SZJ.

inserted immediately after the verb. AUX seems to be similar to auxiliary verbs reported for some other sign languages (Bos, 1994; Fischer, 1996; Sapountzaki, 2005; Steinbach and Pfau, 2007): it is never combined with a regular agreeing verb or with a [–animate] participant, and it originates from two concatenated pronouns that are connected by an arc movement.

4.3.2 Sign order

The unmarked sign order is the pragmatically unmarked surface order of subject, object, and verb. To establish what the unmarked sign order is in SZJ, Pavlič (2016) collected a small dataset elicited through a Picture Description Task.[11] The analysis showed that the unmarked transitive sign order in SZJ is subject-verb-object (SVO), as shown in the above examples (9). Note, however,

that pioneering SZJ researchers claim that there is more than one order of signs available in SZJ (Podboršek and Kranjc, 2010). They explain that any syntactic constituent can function as a topic and that the topic should be introduced first in the sentence. According to their observations, a topic is usually accompanied by non-manual markings: raised eyebrows and eye gaze directed at the addressee or the object of the conversation. Examples or other justifications for such claims are not provided. It should be noted, however, that topics in sign languages tend to be expressed in this way cross-linguistically (e.g., Morales-López et al., 2011; Kimmelman, 2019). Furthermore, Pavlič (2019) has confirmed that topics in SZJ are indeed fronted and accompanied by raised eyebrows, a blink, and a prosodic pause. Example (10a) shows a sentence with a topicalized subject (NEIGH-

(9)   a.   NEIGHBOUR$_a$ $_a$VISIT$_b$ CHILD$_b$

‘A/the neighbour visits a/the child.’

b.   NEIGHBOUR$_a$ $_a$BAKE$_b$ CAKE$_b$

‘A/the neighbour bakes a/the cake.’

c.   NEIGHBOUR$_a$ LIKE   ($_a$AUX$_b$)   CHILD$_b$

‘A/the neighbour likes a/the child.’   SZJ

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[11] The picture description task (PDT) was first used in sign order research in sign languages by Volterra et al. (1984).

BOUR) and example (10b) shows a similar sentence with a topicalized object (CAKE). Note that only arguments in sentences with explicit verb-argument agreements (realised either on agreeing verb or on agreement auxiliary) can undergo topicalization.

<u>brows:raised + blink</u>
(10)   a.   NEIGHBOUR$_a$ $_a$BAKE$_b$ CAKE$_b$

'It is a/the neighbour that bakes a/the cake.'

<u>brows:raised + blink</u>
       b.   CAKE$_b$ NEIGHBOUR$_a$ $_a$BAKE$_b$

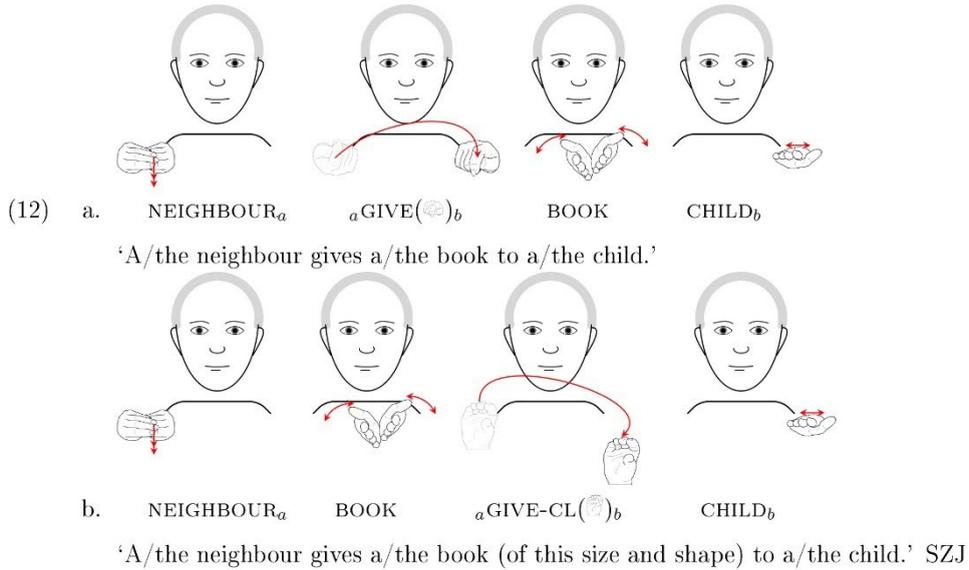'It is a/the cake that a/the neighbour bakes.'   SZJ

Research on sign order in sign languages has also focused on marked sign order that may be triggered by modality factors: spatial verb-argument agreement, semantic reversibility, and iconicity (Fischer, 1975; Napoli and Sutton-Spence, 2014). In many sign languages, non-agreeing verbs and reversible events use the unmarked sign order, while agreeing verbs and non-reversible events also allow marked sign orders (Quadros, 1999). Pavlič (2016) investigated some factors reported to trigger marked orders in sign languages, namely three instances of predicate complexity (agreeing predicates, classifier predicates, and locative predicates) and argument structure complexity (transitive vs. ditransitive predicates). He showed that neither reversibility nor verb-argument agreement affect sign order in SZJ, while classifier predicates trigger a marked sign order. For example, in a transitive sentence with a non-classifier verb such as DRINK, the verb precedes the direct object (11a), whereas in a transitive sentence with a classifier verb such as DRINK-CL, the direct object precedes the verb (11b).

(11)   a.   NEIGHBOUR$_a$ DRINK   MILK

'A/the neighbour drinks milk.'

       b.   NEIGHBOUR$_a$ MILK   DRINK-CL(⬤)

'A/the neighbour drinks milk from a glass.'   SZJ

Furthermore, in a ditransitive sentence with a non-classifier verb such as GIVE, the verb precedes the direct object (12a), whereas in a ditransitive sentence with a classifier verb such as GIVE-CL, the direct object precedes the verb (12b). Note that, in contrast to transitive agreeing verbs, ditransitive agreeing verbs agree with the subject and the *indirect* object (with thematic role of the receiver), while the *direct* object does not participate in the agreement, instead it is signed in the neutral signing space.

Another interesting factor is the reason why classifier predicates trigger the non-basic sign order. Among others, Supalla (1986), Emmorey (2003), and Zwitserlood (2003) showed that classifier predicates are (morphologically) complex predicates, and their complexity is assumed to trigger their marked sentence positions, since 'heavy' constituents tend to linearise as the rightmost constituents in the sentence. However, in SZJ ditransitives, the classifier predicate follows the direct object (as in transitive sentences with a classifier predicate), but does not occur as the last constituent in the sentence. This shows that an analysis in terms of heavy predicate shift cannot be maintained for this language. Pavlič (2016) claimed that a classifier predicate does not move to higher sentential projections due to its nonverbal status, but remains in its base-generated position within a verb phrase. For SVO languages such as

(12)   a.   NEIGHBOUR$_a$ $_a$GIVE(☺)$_b$ BOOK   CHILD$_b$

'A/the neighbour gives a/the book to a/the child.'

b.   NEIGHBOUR$_a$ BOOK $_a$GIVE-CL(✌)$_b$ CHILD$_b$

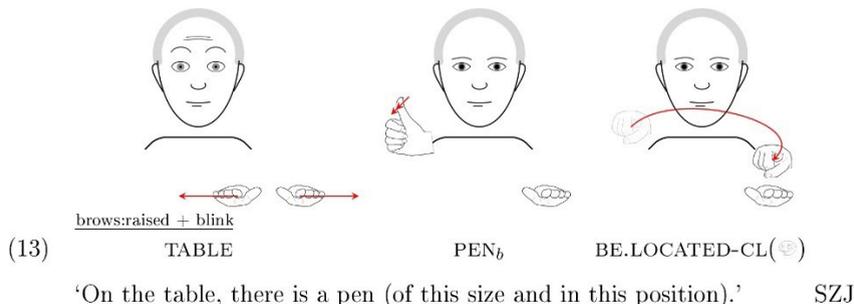'A/the neighbour gives a/the book (of this size and shape) to a/the child.'   SZJ

SZJ, this analysis correctly predicts a change from unmarked SVO order (11a) to marked SOV order (11b) for transitive classifier predicates, and from unmarked SVO$_d$O$_i$ order (12a) to marked SO$_d$VO$_i$ order (12b) for ditransitive classifier predicates.

4.3.3 Locative expressions

From a cross-linguistic perspective, locative expressions are often described in terms of a participant that provides a locative reference (Ground) and a participant that is localised with respect to this reference (Figure). In sign languages, 'Grounds' are usually established first and 'Figures' introduced later – see Emmorey (2003) for American Sign Language and Engberg-Pedersen (1993) for Danish Sign Language.

According to Pavlič (2016), in SZJ locative constructions, the 'Ground' is also established first (TABLE in example 13). The sign is accompanied by raised eyebrows that mark it as a scene-setting topic (compare to Morales-López et al., 2011 and Kimmelman, 2019). The end of the 'Ground' constituent is marked by a prosodic marker, namely an eye-blink. The non-dominant hand is held in place and maintains its handshape, while the dominant hand simultaneously produces a 'Figure' sign (PEN) and a predicate sign (BE.LOCATED-CL). The predicate sign is modulated such that its movement begins at the location where the 'Figure' (PEN) was articulated and ends at the location where the 'Ground' (TABLE) was articulated. This encodes the complex meaning of "being on/under/near the surface of" without the use of an overt adpositional sign. This is consistent with most other sign languages, in which signers also encode relationships between locative arguments with a complex predicate consisting of

brows:raised + blink

(13)   TABLE   PEN$_b$ BE.LOCATED-CL(✋)

'On the table, there is a pen (of this size and in this position).'   SZJ
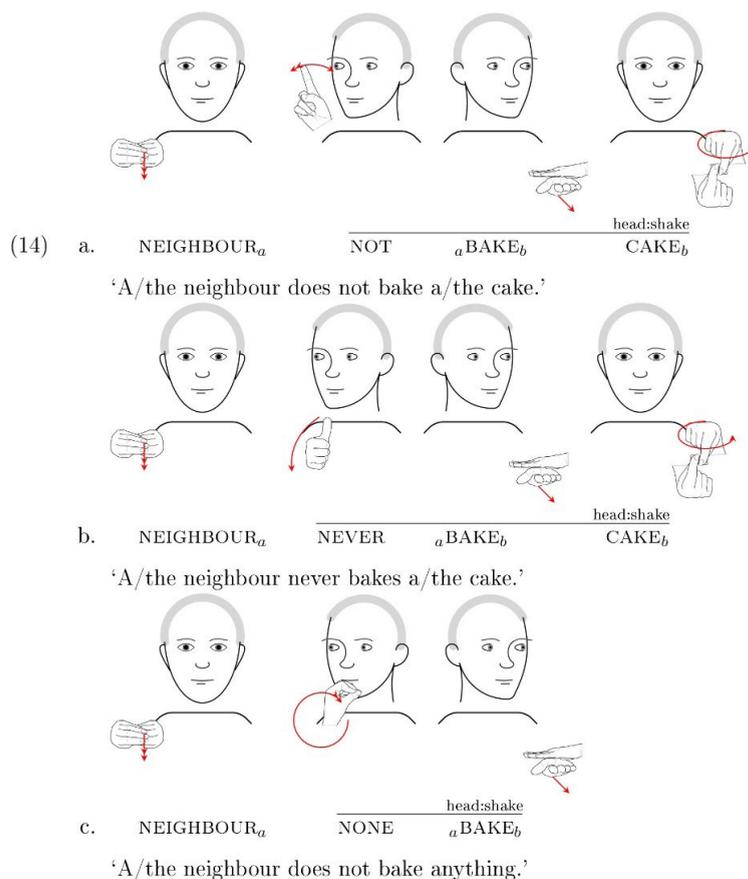
several independent morphemes, as discussed by Pfau and Aboh (2012) and as reported for American Sign Language (Fischer, 1975), Russian Sign Language (Kimmelman, 2012), Croatian Sign Language (Milković et al., 2007), Sign Language of the Netherlands (Coerts, 1994), Australian Sign Language, Flemish Sign Language and Irish Sign Language (Johnston et al., 2007).
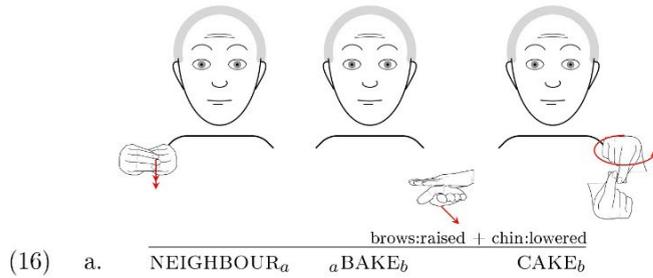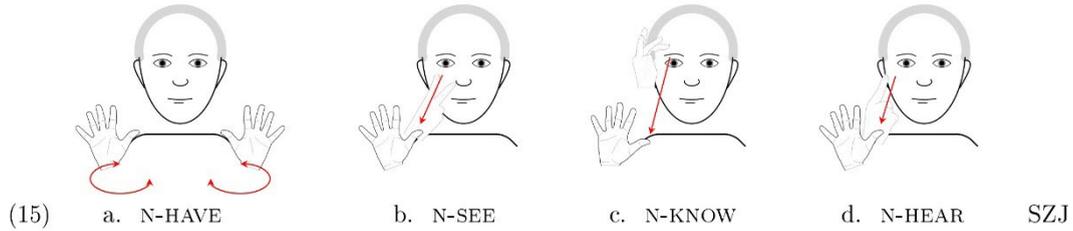
4.3.4 Negation

Negative manual and non-manual markings in most sign languages have a non-linguistic gestural source. This is the reason why negated sentences in many sign languages of the world contain rather similar elements (see e.g., Coerts, 1992; Zeshan, 2000; Hendriks 2007). However, sign languages differ in how these elements are signed, as well as how they are combined in a sentence (Zeshan, 2004; Oomen and Pfau, 2017). The differences are most obvious in the type of head movement, the duration (spreading) of the non-manual marking, and the number of negative elements in the sentence.
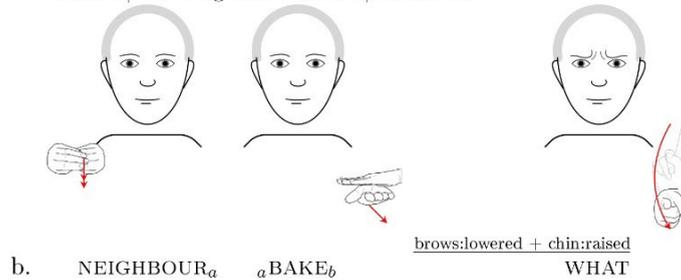
In SZJ, negated sentences must contain both a manual negative marker, such as the negative particle NOT, and a non-manual negative marker, namely a headshake (14a). If one of the markers is missing, the sentence is ungrammatical – this makes SZJ a "manual-dominant sign language" (cf. Zeshan, 2004). The manual negation precedes the verb, and the non-manual marker is articulated simultaneously with the manual marker. Besides the negative particle NOT, there are also other negative manual signs in SZJ such as NONE and NEVER. However, there can be only one negative manual marker in a negated sentence (besides the non-manual marker): in example (14b), the negative particle NOT is omitted and NEVER is signed, while in example (14c), the negative particle NOT is omitted, and NONE is signed. This led Pavlič (2019) to conclude that the negative non-manual marker carries the interpretable (se-

(14) a. NEIGHBOUR_a NOT $_a\text{BAKE}_b$ $\overline{\text{CAKE}_b}$ (head:shake)

'A/the neighbour does not bake a/the cake.'

b. NEIGHBOUR_a NEVER $_a\text{BAKE}_b$ $\overline{\text{CAKE}_b}$ (head:shake)

'A/the neighbour never bakes a/the cake.'

c. NEIGHBOUR_a $\overline{\text{NONE} \quad _a\text{BAKE}_b}$ (head:shake)

'A/the neighbour does not bake anything.'   SZJ

(15) a. N-HAVE   b. N-SEE   c. N-KNOW   d. N-HEAR   SZJ

brows:raised + chin:lowered

(16) a.   NEIGHBOUR$_a$ $_a$BAKE$_b$ CAKE$_b$

'Does a/the neighbour bake a/the cake?'

brows:lowered + chin:raised

b.   NEIGHBOUR$_a$ $_a$BAKE$_b$ WHAT

'What does a/the neighbour bake?'

brows:lowered + chin:raised

c.   WHAT   NEIGHBOUR$_a$ $_a$BAKE$_b$
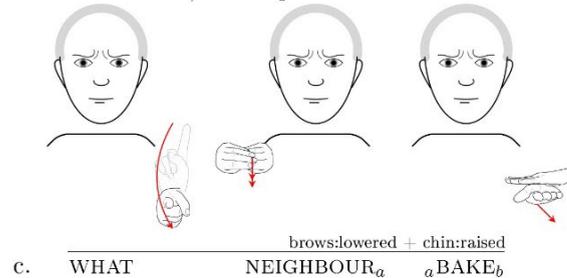
'What does a/the neighbour bake?'   SZJ

mantic) negative feature, while the manual negative markers (NOT, NONE and NEVER) carry an uninterpretable negative feature and must therefore agree with the non-manual marker.[12]

In SZJ, there are also irregular negative verbs. The affirmative forms of all these verbs are all body-anchored. Under negation, these forms are combined with a bound morpheme derived from the negated verb N-HAVE (15a) and signed with all fingers extended and spread in the neutral signing space. Consequently, irregular negative verbs usually retain the starting point on the body, their initial handshape and orientation – but end up oriented away from the body, with all fingers extended and spread, and in neutral signing space (15b–d).

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[12] Such an analysis is based on Zeijlstra (2004) and subsequent work, and it was first extended to sign language research by Pfau (2016).

4.3.5 Question formation

Questions are used to obtain information from the addressee. The addressee provides information in the form of an answer. If the addressee can choose between the options (implicitly) proposed in the question, it is a polar question (i.e., a yes/no question). If the addressee is requested to add new information, it is a content question (i.e., a wh-question). According to Pavlič (2019), these two types of questions in SZJ differ in terms of non-manual markings and fit the typological patterns observed for many other sign languages (e.g., Cecchetto, 2012). Polar questions are marked by raising the eyebrows and lowering the chin: these non-manual markers spread over the entire sentence (16a). Content questions are marked by lowering the eyebrows and raising the chin: the non-manual markers simultaneously accompany the question sign as seen in (16b) and spread over the rest of the sentence as seen in (16c). Note that the wh-sign seems to be allowed both in situ (16b) and in the fronted position (16c), although it is not clear yet what conditions determine the position.

5. CONCLUSION

Studies of SZJ can contribute to linguistic research in general and sign language research in particular. Moreover, linguistic studies have always proved crucial in reducing the social and cultural isolation of Deaf communities. This paper presents some of the linguistic phenomena that have been described so far for SZJ. These descriptions can be considered as a collective effort to promote SZJ and as a useful reference point for all professionals working with SZJ. Each of these topics deserve their own individual monographic study. Moreover, if we compare the list of phenomena studied so far in SZJ with the checklist from The SignGram Blueprint (Quer at al., 2017), it becomes clear how many topics are still yet to be addressed by linguists. Therefore, the aim of this paper is also to stimulate further and more detailed research on SZJ.

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