From gesture- and sign-in-interaction to grammar: Fictive questions for relative clauses in signed languages¹

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Abstract

We discuss the use of the question-answer pattern for relativization across signed languages, with special attention for Catalan Sign Language. These are cases in which grammatical features of the interrogative construction used for genuine information-seeking questions also appear as the most unmarked, frequent, or only linguistic means of expressing restrictive and non-restrictive relative clauses, as well as appositives. This is intriguing, since relative clauses occur within one sentence and thus within one conversational turn, whereas the question-answer structure is prototypically dialogical, representing the turn-taking between addresser and addressee. We analyze such interrogative-like constructions as involving *fictive interaction*, the use of the conversation frame to structure cognition, discourse, and grammar (Pascual, 2006, 2014). We further suggest that the non-manual feature of eyebrow raising, which marks both information-seeking questions and relative clauses in Catalan Sign Language, became grammaticalized from a common non-obligatory gesture in the spoken Catalan of the surrounding hearing community. Hence, a gesture accompanying spoken language became a linguistic marker in a signed language, illustrating transfer between languages of different modalities. This is also presented as showing the emergence of grammar from situated intersubjective interaction (Li and Thompson, 1976; Sankoff and Brown, 1976). We make a case for the understanding of grammatical structure as primarily reflecting its mode of usage rather than some sui-generis Universal Grammar. This paper is based on the bibliographic study of 17 signed languages from different families and the qualitative analysis of own Catalan Sign Language data from different discourse genres.

Key Words

Catalan Sign Language, fictive interaction, gesture accompanying language, grammaticalization, intersubjectivity, non-information-seeking questions, relativization, signed languages

Introduction

One of the most fundamental and contested questions in Linguistics today is that of the innate vs. acquired nature of language. It is naturally indisputable that humans are the only animals with as complex a communicative sys-

tem as language, and that language is found in all human communities, regardless of ethnicity, group size, or level of industrialization. Gone are the days when linguists depicted the languages of non-industrialized societies as ‘primitive’ and the signs in languages of the deaf and deafblind as mere mimetic gestures. There is however

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still no consensus to date on how to account for human language. Are all human beings born with a *sui-generis* language capacity, whether in the form of a language gene or brain area? Are we endowed with an innate mental grammar that allows us to acquire any structure of any language, given enough exposure? And if so, what would such a grammar look like? Alternatively, are we ‘simply’ born with a sophisticated brain that is particularly suited for high-level cognitive operations of a symbolic nature? Could language be a ‘mere’ byproduct of our highly evolved, behaviorally modern human brain, a useful tool all human societies ended up developing, so as to meet the basic need to coordinate with others, ours being a particularly social species? A related issue, which is just as critical to the understanding of language and is just as controversial, is the division between semantics and pragmatics, discourse and grammar, language structure and language use. If language is not innate but acquired, then it must have emerged and developed from successful instances of usage. One would then also expect its form to somehow mirror the common denominator structure of such specific instances of usage as well as show traces of the shared structure of past occurrences. If language is acquired it needs to be learnable, and thus the amount of constructions available to language users matters, as does their structure.

We certainly do not pretend to resolve these complex issues in this paper. We aim to contribute to the debate by showing how certain grammatical constructions may have arisen from discourse structures that seem more fundamental and that in their turn reflect and seem to have originated in the constant change of roles between interlocutors in conversation. Specifically, we discuss relativization in signed languages to postulate for a dialogical, usage-based account of grammar. As it is, in signed languages restrictive and non-restrictive relative clauses, just as other common linguistic constructions, are generally expressed through a construction with clear formal overlaps with factual information-seeking questions. We argue that the use of non-genuine questions for relative clauses illustrates that intersubjectivity is at the very core of language and that grammar partly emerges from and reflects language use.

Interrogatives for non-information-seeking functions

This paper focuses on the grammaticalization of the question-answer pattern, which is a prototypical interactional structure, as it invariably involves viewpoint shift and mimics the turn-taking of ordinary conversation. It has long been noted that the interrogative construction is frequently used for non-information-seeking functions in a great number of discourse genres and languages, spoken and signed (see Pascual, 2014: 29–57 for an overview). For instance, question-answer pairs are often used as a

discourse-structuring device in monologues, with addressers taking the roles of both questioner and answerer by voicing questions their audience may have, only to subsequently respond in their own voice (e.g. “Why do I say this? Because...”). The use of a question-answer structure for organizing discourse characterizes the speech of educators (Brandt, 2008), trial lawyers (Ilie, 1999; Pascual, 2014: 29–57, 169–188), and rhetoricians (Xiang and Pascual, 2016). Such expository questions are in fact extremely common in different discourse genres across a large number of unrelated languages, such as English (Li and Thompson, 1976; Pascual, 2014: 29–57, 169–188); Mandarin Chinese (Xiang and Pascual, 2016); Russian (Cienki, p.c.); ancient Arabic (Badarneh, 2003); and both Biblical and modern Hebrew (Moshavi, 2010; Sandler, p.c.). Rhetorical questions, which are to be processed as questions but understood as statements, also exist in numerous typologically unrelated languages (see overviews in Badarneh, 2003 and Ilie, 1994).

Interestingly, in many languages non-genuine questions serve to express relations between clauses or even phrases. Several studies have pointed out a close relationship –some resulting from syntacticization– between: (i) questions and topics (as well as topics and connectives); (ii) questions and conditionals (as well as topics and conditionals); and (iii) questions and focus (as well as conditionals and focus). Consider these attested examples (Pascual, 2014: 30, 32):

- (1) a. Ages 6 to 12? I’m a killer.
- b. ...And then what happened? The moment the Supreme Being disappeared, ...
- c. Do you have any questions? Call us!

In (1), an interrogative structure, illustrating the prototypical turn-taking exchange, is used for a function other than that of actual information-seeking question, namely topicality (1a), focus (1b), and conditionality (1c). Jespersen ([1940] 2006) claims that English and German conditionals arise from polar questions, suggesting that conditionals are in fact questions with an implied positive answer (but see an alternative –but equally dialogical– account for English in Leuschner, 2016). Since Haiman’s (1978) characterization that “conditionals are topics” in Hua, a Papuan language, similar evidence has been adduced from a number of unrelated languages in which the grammar used for genuine questions in dialogue also constitutes the most unmarked or even the only grammatical means of expressing information structure and conditionality within one turn (cf. Pascual, 2014: 29–57). Moreover, some studies establish a link between conditional and focus structures in several languages from different families. Cross-linguistically, these constructions may show an identical form or share similarities in morphological marking, syntactic properties, and semantic interpretation (cf. Haiman, 1978; Givón, 1979; Traugott, 1985, 1988; Heine et al., 1991; Herring, 1991; Hopper and Traugott, [1993] 2012).

Table 1. Relative markers in signed languages.

Sign Languages	Facial features				Head and body features				Manual marking
	Brow raise	Tensed or squint eyes and/ or blink	Tensed lips	Tensed cheeks	Backward head lean	Forward head lean	Right or left head lean	Body lean	
American SL (ASL)	√	√	√	–	√	√	–	–	optional
Argentine SL (LSA)	?	?	?	?	?	?	?	?	?
Australian SL (AUSLAN)	√	–	–	–	–	–	–	–	optional
Brazilian SL (LIBRAS/LSB)	√	–	–	–	–	–	–	–	optional
Catalan SL (LSC)	√	√	–	–	–	–	–	√	optional
Danish SL (DSL)	–	√	–	–	–	–	–	–	optional
French SL (LSF)	√	–	–	–	Slight head tilt	Slight head tilt	–	–	pointing
German SL (DGS)	√	–	–	–	–	√	–	√	pointing?
Hong Kong SL (HKSL)	√	–	–	–	–	√	–	–	optional
Israeli SL (ISL)	√/?	√	√	–	–	√	–	–	optional
Italian SL (LIS)	√	√	√	√	–	√	–	–	pointing
Japanese SL (JSL)	√	√	–	–	–	√	–	–	pointing?
Russian SL (RSL)	√	√	–	–	–	√	√	–	√
SL of Netherlands (NGT)	√	–	–	–	–	–	–	–	optional
Spanish SL (LSE)	√	–	–	–	–	–	–	–	optional
Swedish SL (SSL)	√	–	–	–	√	–	–	–	optional
Turkish SL (TİD)	√	√	–	–	√	√	–	√	optional

Perhaps more strikingly, Keenan and Hull (1973) show a syntactic overlap between *wh*-cleft sentences expressing focus (e.g. “It is she who...”) and ordinary relative clauses (e.g. “Jean, who...”) in various unrelated languages (see Pascual, 2014: 53 for an overview). Indeed, grammatical features of information-seeking interrogatives –as well as topic and focus– are also used in the expression of relativization in a large number of languages (cf. Bresnan and Grimshaw, 1978, and see Pascual, 2014: 53 and Schmidtke-Bode and Diessel, *forth.* for an overview). Thus, the English *wh*-pronoun used for genuine open information-seeking questions is also observed in restrictive relative clauses (e.g. “the time when...”, “the state where...”), non-restrictive relative clauses (e.g. “In winter, when...”, “Nigeria, where...”), and free-relative clauses (e.g. “where to hide”, “whenever”). Indeed, typological research has identified the *wh*-marker as one of the most common sources for relative markers across the spoken languages of the world (e.g. Sankoff and Brown, 1976; Keenan, 1985; Herring, 1991; Heine and Kuteva, 2002; Kuteva and Comrie, 2005; Lehmann, 2008; Hendery, 2010, 2012).

Similarly, numerous signed languages display relative clause constructions resembling the ones used for genuine questioning, as well as for rhetorical questions, topic, focus, connectives, and conditionals (see Jarque, 2016 for an overview). In particular, the occurrence of the non-manual marker for polar questions (i.e. eyebrows raising) as the non-manual marker in relative construc-

tions has been observed in various signed languages of different families (see Table 1).²

Relative pronouns are also the same as question pronouns in many sign languages, as are topic and focus pronouns, for that matter. In light of these correspondences, Janzen (1999) argues that American Sign Language has undergone a process of grammaticalization from yes/no questions to topics to connectives, and finally to conditionals. Wilcox (2004: 48) also states that in sign languages “a particular manner of movement of a manual gesture or sign, and various facial, mouth and eye gestures” may start as prosody or intonation gestures, and then grammaticalize to become sign markers of interrogatives, topics, conditionals, and so on (Wilcox, 2004; Wilcox et al., 2010; Wilcox and Xavier, 2013).

We regard these interrogative-like constructions as involving *fictive interaction* (Pascual, 2006, 2014), as they set up a non-genuine channel of communication for the purpose of ongoing discourse. Our account is in line with Sankoff and Brown’s (1976: 631) analysis of the various forms of the interrogative *wh*-marker widely used for relative clauses in Tok Pisin, on which they indicate that “syntactic structure [...] can be understood as a component of, and derivative from, discourse structure”. In what follows we provide further evidence for this claim through the analysis of question-answer pairs used for relativization in various signed languages, with special attention for Catalan Sign Language.

2 The information in this table is based on our bibliography study of the available publications on: American Sign Language (Liddell, 1978; McIntire, 1982; Coulter, 1983; Fontana, 1990; Wilbur, 2017); Argentine Sign Language (Veinberg and Massone, 1992); Catalan Sign Language (Mosella, 2012; Jarque, 2016); Danish Sign Language (Engberg-Pedersen, 1990); French Sign Language (Hauser and Geraci, 2018; Hauser, 2019); German Sign Language (Pfau and Steinback, 2005; Happ and Vorköper, 2006); Hong Kong Sign Language (Tang and Lau, 2012); Israeli Sign Language (Sandler, 2006; Dachkovsky and Sandler, 2009); Italian Sign Language (Brunelli, 2006, 2011; Branchini and Donati, 2009; Branchini, 2014; Cecchetto and Donati, 2016); Japanese Sign Language (Penner and Yano, 2019); Russian Sign Language (Khristoforova and Kimmelman, 2020); and Sign Language of the Netherlands (Kimmelman and Vink, 2017; Wilbur, 2017). Examples and limited references to relative clauses are found regarding Brazilian Sign Language (Nunez and de Quadros, 2004); Spanish Sign Language (Herrero, 2009); and Swedish Sign Language (Bergman, 1994).

Data and methodology

We combine a typological study of relative clauses in different and unrelated signed languages with a qualitative analysis of Catalan Sign Language (henceforth ‘LSC’), an understudied language used by the signing deaf community of Catalonia, North-East Spain. The bibliographic study encompasses descriptions of relativization in 17 signed languages from different families (see Tables 1 and 2), which to our knowledge constitute all the signed languages in which this construction has been described so far. Our Catalan Sign Language analysis is mostly based on a self-gathered corpus of approximately 9 hours, involving 20 deaf adult signers from Catalonia between 40 and 68 years of age, all native or near-native signers that are either from a family of two or three generations of LSC signers or acquired LSC before the age of six. They all consider LSC as their first language and identify as active members of the Catalan Deaf community. The corpus consists of naturalistic LSC discourse from various genres as well as elicited data from different text types. The naturalistic data comprises ten video posts on a personal blog by a second-generation signer, a leader of the Catalan Deaf movement regarded as a model signer in the LSC community. Our corpus also contains brief news reports, documentaries, and stories from an institutional website of the Catalan Federation for the Deaf as well as one conversation between acquaintances and three semi-structured interviews between friends and relatives. The elicited data consist of eight narratives of the wordless picture book ‘Frog, where are you?’ (Mayer, 1969) and the short silent movie ‘The pear story’ (Chafe, 1980), both of which are classic stimuli to elicit narratives.

Questions in signed languages

In a great number of unrelated signed languages, ordinary information-seeking questions are encoded through non-manual marking, such as eyebrow raise. Non-manual marking being suprasegmental (in the same way as intonation is in spoken languages), it may spread over various signs in a clause or sentence. Also like intonation in spoken languages, non-manual marking in signed languages expresses illocutionary force (assertion vs. question), continuation, and dependency across clauses, as well as information flow (Sandler et al., 2011). A typological study of 35 signed languages (Zeshan, 2004) found that they all use non-manual marking for polar questions, most of them involving a similar combination of features, including: (i) eyebrow raising, (ii) eyes wide open, (iii) eye contact with the addressee, (iv) head forward position, and (v) forward body posture. The most consistent marker for genuine yes/no questioning across signed languages

is eyebrow raising, although it is not a universal one. For instance, in Indo-Pakistani Sign Language eyebrow raising does mark particular subtypes of questions (e.g. echo questions), but its use is otherwise optional (Zeshan, 2000, 2004: 20). Also, eyebrow position (raising and furrowing) in polar questions ‘only’ bears a pragmatic meaning in Turkish Sign Language (Gökgöz and Arık, 2011; Göksel and Keleşir, 2013), interrogatives being prosodically and syntactically marked through head movements (i.e. a forward head tilt and a head nod). Furthermore, eyebrow raising does not seem to be fully grammaticalized in most signed languages studied so far, since facial markings do not seem obligatory in any of them (Beuchar, 1984; Dubuisson and Miller, 1992; Bouchard and Dubuisson, 1995; Báez and Cabeza, 2002; Johnston and Schembri, 2007). In fact, some signed languages even lack them (Hendrichs, 2008).

In Catalan Sign Language polar questions are generally marked solely by non-manual articulators, namely eyebrow raising and a forward head nod, but they may optionally include a manual question particle glossed usually as ‘YES.OR.NOT’ (Jarque, 2006). This can be observed in the following extract from an interview between friends (Jarque, 2016: 174):³

- (2) Interview 1’ (EMS 00:15:38 MS)
 Interviewer: palm.up [PRO.2 THINK FUTURE CAN QUIT]-eyebrow raising+head forward [NOT]-negative headshake/left hand
 Interviewee: fac.exp.uff PRO.1 KNOW-NOT
- Lit. Interviewer: ‘Do you think that you will be able to quit smoking in the future? Or not?’
 Interviewee: (uncertainty gesture) ‘I don’t know.’

In (2) the interviewer’s yes/no interrogative, marked with eyebrow raising and head leaning forward, needs to be interpreted as a genuine information-seeking question, which the interviewee answers in the next turn. Take now example (3) from a monologic narrative:

- (3) ‘The spider tale’: (WebVisual, WV_UASTUM_DA, 00:47–00:52)⁴
- Lit. ‘The old lady? She goes: “What can I do?”. She thinks for a while (and then says): “I got it. If the spider eats (the fly then)...”.’
 ‘The old lady, she wonders what to do. She thinks for a while (and then decides): “If the spider eats (the fly then)...”.’

Here, the topic constituent (lit. ‘The old lady?’) is produced with an intonational phrase characterized by brow raise, co-occurring with the entire phrase, as well

³ See the list of transcription conventions in Appendix 1.

⁴ All images in this paper are reproduced with the signers’ informed consent. Link to the video-recording of this example: <https://www.youtube.com/watch?v=NFxinu1XXzY&t=52s>.

as squint, beginning at ‘PERSON’. Both markings finish with forward leaning on the last sign. All non-manual signs relax at the intonational phrase boundary, and the second intonational phrase starts with the head position up and back, brows lowering, and a facial expression that enacts the thinking action referred to. Thus, both the topic and the reported question the woman asks herself share non-manual features with genuine information-seeking questions, as in (6).

In sum, in signed languages both polar and wh-questions are commonly marked by non-manual articulators (i.e. eyebrow raising) and boundary markers, wh-questions also showing an additional non-manual marker. Eyebrow raising is the most consistent marker for genuine polar questions, as well as for fictive questions (e.g. for topic).

Relatives across signed languages

The most common formal marker for relativization in most signed languages studied to date is similar to that for information-seeking polar questions and the topic marking that seems to have emerged from genuine polar question marking. Cross-linguistically, restrictive relative clauses tend to be obligatorily marked prosodically by eyebrow raising. This facial marker generally either accompanies the head noun and spreads over the entire relative clause in internally-headed clauses or it accompanies the relative pronoun exclusively in externally-headed clauses. Consider the following Catalan Sign Language example, on a children’s story about a polygamous King:

(4) ‘The four wives tale’ (Webvisual, WV_LQE_DA, 00:49–00:53)⁵

Lit. ‘But, the third wife? The one that was the third one?, also the king loved her.

‘But, the wife he married third was also loved by the king.’

The sentence in (4) begins with the manual adversative connective ‘BUT’, produced with focus marking (which coincides with eyebrow raising), followed by the lexical signs ‘FEMALE SPOUSE’ in sentence-initial position and prosodically signaled with topic marking (eyebrow raising and head forward), finished with eye blink. The next constituent begins with eye-gaze to the third finger in the pronominal discourse maker ‘BUOY’, the relative clause being marked by eyebrow raising and wide-open eyes. The entire phrase, with formal markers also occurring in genuine information-seeking questioning, is a topic.⁶

Eyebrow raising may simultaneously be accompanied by other non-manual markings produced through facial articulators, such as a raised upper lip or pursed lips, or the position of head and body (backwards or forwards). Language-specific non-manual markers of relative clauses in other signed languages are backward head tilt and raised upper lip in American Sign Language (Liddell 1978), a slight body lean towards the location of the relative pronoun in German Sign Language, and tensed eyes and pursed lips in Italian Sign Language (Tang and Lau 2012). Israeli Sign Language constitutes an exception, marking relative clauses with upper lip raise, squint, and head forward, and less frequently with eyebrow raising (Dachkovsky and Sandler 2009). See Table 1 in the appendix for a cross-linguistic

5 Link: <https://www.youtube.com/watch?v=vuPuu04TnpM&t=159s>

6 The link between topic and relativization may also exist in other sign languages, examples of which have solely been analyzed as involving restrictive or non-restrictive relative clauses. Take (i) below from Swedish Sign Language (and see also examples (9) and (10)). Here, the non-manual marking involving facial articulators change immediately after signing the relative clause. Also, prosodic boundary markers, like an eye blink or a pause, may occur at clause final (Bergman, 1994: 315):

(i) [TWO BOYS HERE]-eyebrow raising+raised cheeks+chin draw back, DEAF BOTH
 Lit. ‘The two boys were here? Both are deaf.’
 ‘The two boys who were here are both deaf.’

overview of relative markers, and see Branchini (2014), Kubus (2016), and Wilbur (2017) for a detailed comparison of the syntax of relativization in different signed languages.

While brow raise is the most consistent marker of relativization across signed languages, it is clearly not a universal one. Non-restrictive relative clauses (or appositives) and maximalizers have received little attention. To our knowledge, appositive relative clauses have only been dealt with in Italian Sign Language (Brunelli, 2006), German Sign Language (Happ and Vorköper, 2006), and Turkish Sign Language (Kubus, 2016). In some signed languages, the difference between restrictive and appositive relative clauses may lay in the non-manual marking, as pointed out by Brunelli (2006) for Italian Sign Language, in which lack of tense eyes and cheeks indicates appositive reading in relatives. In Australian Sign Language, however, restrictive clauses appear inside a noun phrase and are marked non-manually through raised eyebrows and a backward head tilt (Johnston and Schembri, 2007: 214), as in:

- (5) TODAY [NEW TEACHER LOOK SAME POSS-
1 MOTHER]_{-eyebrow raising+headtilt backward} ARRIVE
SCHOOL

Lit. 'Today, the new teacher looking like my mother? came to school.'

'The relief teacher who looks just like my mother came to school today.'

By contrast, non-restrictive clauses are separated from the rest of the sentence by pauses and are not marked by any specific non-manual features, as in the following example (Johnston and Schembri, 2007: 214):

- (6) [TODAY NEW TEACHER]_{-eyebrow raising} THINK
FROM PERTH, ARRIVE SCHOOL

Lit. 'Today, the new teacher?, I think from Perth?, came to school.'

'The new teacher, who I think is from Perth, came to school today.'

Concerning 'squint eyes', this marker does not seem linked to restriction but to shared information. We will come back to this issue later, in example (10e) and (12), in Section "Intersubjective non-manual marking" below.

Manual marking

Apart from non-manual marking, manual marking is optional across signed languages, except for German Sign Language (Pfau and Steinbach, 2005) and Italian Sign Language (Branchini and Donati, 2009). Italian Sign Language shows an obligatory manual relative pronoun,

as illustrated in the pointing sign glossed as 'PE' below (Branchini, 2014: 191):

- (7) [TODAY MANi PIE BRING PEi]_{-eyebrow raising+eyes_}
_{tension +upper.cheeks} YESTERDAY (INDEXi) DANCE

Lit. 'The man bringing the pie today himself? danced yesterday.'

'The man that brought the pie today danced yesterday.'

As opposed to American Sign Language, for which it is generally agreed that the relative clause element is optional, there is no consensus on this issue regarding Italian Sign Language. Whereas Brunelli (2011) considers the manual relative marker to be a pragmatic option, other authors regard it as a grammatical must (Branchini and Donati, 2009; Branchini, 2014; Cecchetto and Donati, 2016).

Catalan Sign Language shows two relative markers, i.e. 'SAME' and 'OF', also glossed as their spoken Catalan equivalents 'MATEIX' (Mosella, 2012) and 'DE' respectively. Consider the prototypical use of 'SAME' in a relative clause in (8), from a newscast for the Catalan deaf community:⁷

- (8) 'Interview with a deafblind man' (Webvisual, WV_SO_ECM, 00:05–00:16)⁸

Lit. 'Hello! We are at a park, in the open air, it is very quiet here. There are some people playing with

⁷ See Barberà (2016) on specificity marking and 'SAME' in Catalan Sign Language.

⁸ Link: <https://www.youtube.com/watch?v=q2rGr9zIjoM&t=17s>

their dogs. (Also) there are people sitting down, reading. There is a person? He's sitting down.' 'Hello! We are at a park, in the open air, it is very quiet here. There are some people playing with their dogs. (Also) there are people sitting down, reading. One of these people (that are) sitting down...'

Critically, intonational phrase boundaries are also marked by an across-the-board change in facial expression. Regardless of the facial articulators involved (e.g. outer or inner eyebrows, upper or lower eyelids), or the articulation manifested, they all typically change their position at the boundary between intonational phrases. The alignment of facial expression with intonational phrase boundaries indicates that facial expressions has intonational status in LSC (and possibly in all sign languages). The newscaster continues:

- (9) 'Interview with a deafblind man' (Webvisual, WV_SO_ECM, 00:16–00:17)⁹

a. [(BE.SEATED /PERSON) p IX [DEAF] IX p
[eyebrow raising]
[eye gaze] [head nod]
[head]
[closed eyes]

b. [IX PERSON SAME] SIGN.NAME.CARLOS IX
[eyebrow raising]

Lit. 'That person sitting down? He's deaf. That same person? He is Carlos.'

'One of these people (that are) sitting down is a deaf person who is called Carlos.'

The restrictive relative clause construction helps the addressee determine the referent and add crucial information on it. Every clause provides additional identifying information, which serves to establish mental contact between the signer and the addressee. As for 'OF', it is a polyfunctional LSC grammatical marker functioning as a partitive, a possessive, and a relativizer conjunction. Consider the example below, from the same narrative as example (4):

- (10) 'The four wives tale' (Webvisual, WVQE_DA, 02:23–02:39)¹⁰

a. IX_i KING_i LOOK.AT-IX_{wives} p THINK SICK.BREAST BE.SICK-DURATIVE.
ASP p
[eyebrow raising] [eyebrow lowering]

b. PRO.1 HAVE [FOUR PERSON-PLU] SPOUSE p
[eyebrows raising]

c. [EXAMPLE BE.PERSON-1 DIE] BE.SURE BE.PERSON-1 PRO.1 ALONE
[eyebrow raising + forward head lean]-conditional
[eyebrow raising]

d. LOOK.AT-DISTRIBUTIVE [hum] p [1-AVISAR-3] FOURTH [PERSON]
[head.nod]
[squint.eyes]
[eyebrow raising]
[head forward]

e. [OF (IX.FOURTH/BUOY-FOURTH)] SPOUSE₃ (IX3 / 3-ASK-3)
[eyebrow raising]

Lit. 'The king was very ill and told himself: "I have four wives. If I die, I will sure be very alone". (Then) looking at his four wives, he addressed himself to what person? The fourth? That spouse, and asked her [...]'

'The king was very ill and told himself: "I have four wives. If I die, I will sure be very alone". (Then) looking at his four wives, he addressed himself to wife number four/the wife that was number four, and asked her [...]'

In (10e) the first intonational phrase is characterized by squint followed by eyebrow raising, co-occurring with the phrase 'FOURTH BUOY-FOURTH' and the second intonational phrase starting with neutral expression on the upper face. That second intonational phrase then changes with the third intonational phrase, displaying the head position up and back and eye-gaze oriented up towards the syntactic location of the referent. Thus, the favored

9 Link: <https://www.youtube.com/watch?v=q2rGr9zIjoM&t=17s>

10 Link: <https://www.youtube.com/watch?v=vuPuu04TnpM&t=159s>

function of the ‘OF’ relative clause construction is to re-introduce both the head noun and the modifying clause into the text to disambiguate the target referent among the four spouses.¹¹

Preferred position

In signed languages, relative constructions may appear in three different positions: (i) sentence-initial position (fronted); (ii) final position (postponed); or (iii) in situ (i.e. in its basic position, that is, in the head noun’s argumentative position, which varies depending on the language’s syntax). Crucially, in-situ relative clauses tend to be acceptable, but are rare in signed languages, whereas sentence-initial relatives (i.e. in topic position) are preferred. This is shown below for Spanish Sign Language (Herrero, 2009: 139):

- (11) [TELEVISION PRO.2 WANT_i]-brow raising, PRO.1 BUY

Lit. ‘The television (that) you wanted? I bought.’
‘I bought the television that you wanted.’

Table 2 provides an overview of the syntax of relative clauses in signed languages (modified from Kubus, 2016 and Mosella, 2012 and with the results of our own bibliographic study).

Table 2. The positions of relative clauses in signed languages.

Language	Initial/Fronted	Postponed/Extraposed	In situ
American SL (ASL)	√	?	√
Brazilian SL (LIBRAS/ LSB)	–	–	√ / possible
Catalan SL (LSC)	preference	infrequent	–
French SL (LSF)	?	?	?
German SL (DGS)	preference	√	√
Hong Kong SL (KSL)	preference	?	possible
Israeli SL (ISL)	√	–	√
Italian SL (LIS)	√	√	√
Japanese SL (JSL)	√	√	–
Russian SL (RSL)	√	√	–
SL of the Netherlands (NGT)	?	?	√
Spanish SL (LSE)	√	√	–
Turkish SL (TİD)	preference	allow	√

The preferred position for relative clauses in Catalan Sign Language is sentence initial, which naturally overlaps with the topic position.

Intersubjective non-manual marking

As mentioned above in relation to examples (3), (6), and (10), and as (12) below shows, squint eyes are often used as

a marker in restrictive and non-restrictive relative clauses (and see also Table 1). In (12), from the last post in a video blog before the summer vacation, the blogger explains that he plans to read five books, then proceeding to discuss one of them, which is particularly thick. After producing the nominal phase ‘1 THICK’, the signer begins the relative clause framed with the relative marker ‘SAME’. He also uses non-manual markers, raising his eyebrows and maintaining them raised until the end of the clause.

- (12) ‘A good summer to all!’ (BV_JMS 30/06/2014; 0:54–0:59)¹²

a. FIVE BOOK-PLU pause [BUT] ONE THICK
[eyebrow raising]

b. [SAME INDEX OF TOPIC EXPLAIN]
[eyebrow raising]
[squint]

c. [OF TWO THREE F]
[... eyebrow raising]
[... squint]

Lit. ‘[...] five books. But? One [of them] is really thick, you know, the same [that] talks about the time of 23 F(ebruary) (you know)...?’

‘[...] five books. But one the books I’m taking, which deals with February 23rd you know, is really thick... (i.e. ‘Wow, it must be very long because it’s really thick’).

Note that in addition and simultaneously to the raised eyebrows that mark the relative clause, the signers’ eyes are half-closed. Squint eyes are regarded as an intersubjective marker indicating shared information and are observed in various signed languages, such as Israeli Sign Language (Sandler et al., 2011). The video blogger assumes that his audience are aware of the commotion in Spain around the then King of Spain’s possible involvement in an attempted coup d’état in February 1981.

Similarly to Danish, Israeli, and Turkish Sign Languages, Catalan Sign Language frequently uses squint to bring into focus potential referents already introduced into the discourse. As stated previously, in relativization squint constitutes a strong non-manual restrictiv-

¹¹ See also Jarque (2016: 180–181) and Jarque and Pascual (2016: 267–269) for the use of the conjunctive marker ‘OF’ for restrictive relative clauses as a means of distinguishing between the two main characters in a narrative.

¹² Link: <https://www.youtube.com/watch?v=7m7mdxuj3Oo>.

ity marker. Squint eyes are used more frequently with restrictive than with non-restrictive relative clauses in Turkish Sign Language (Kubus, 2016), Danish Sign Language (Engberg-Pedersen, 1990), and Israeli Sign Language (Dachkovsky and Sandler, 2009). Take the Israeli Sign Language example below (Dachkovsky and Sandler, 2009: 305):

- (13) [HOUSE INDEX I TOGETHER-WITH-YOU SEE]-squint INDEX RENT

Lit. ‘The house I saw with you? We rent.’
 ‘Finally, we rented the apartment that I’d seen together with you.’

Squint is indeed primarily used to indicate that the information in question is not overt but needs to be retrieved from the interlocutor’s background knowledge (Sandler, 2006; Dachkovsky and Sandler, 2009). What is marked solely by squint (without brow raise) tends to constitute “less accessible topics, relative clauses and temporal clauses with reference to the remote past” (Dachkovsky and Sandler, 2009: 302–303).

In short, while all signed languages studied so far display clear formal overlaps between interrogatives and relatives, every sign language displays unique sets of properties for relative clauses, some even having two or more constructions (externally versus internally headed). Overall, it transpires that: (i) relativization makes use of a bi-clausal structure with the relative clause and its antecedent preferred in sentence-initial position, followed by the main clause; (ii) the relative clause is marked suprasegmentally in a similar way as a question or topic; and (iii) whereas non-manual marking seems frequent and obligatory, the relative manual marker or pronoun may be optional. This is relevant, since in sign languages non-manual prosodic information alone can serve to distinguish declaratives from interrogatives and coordinate from subordinate clauses (Pfau and Quer, 2010; Dachkovsky et al., 2013).

Discussion

We showed that in signed languages from different families, constructions similar to the genuine question-answer sequence can constitute the linguistic encoding for not just topicality, conditionality, focus, and connectivity, but also for relativization (see table in Jarque, 2016: 182). This involves the use of an interactive pattern for expressing a semantic relationship between two propositions, thus instantiating the emergence of a grammatical construction from discourse (Geluykens, 1992; Tomasello, 2003), or rather from intersubjective interaction (cf. Li and Thompson, 1976; Sankoff and Brown, 1976; Givón, 1979; Pascual, 2014). The expression of restrictive and non-restrictive relative clauses through a perspective shift structure also indicates that grammatical embedding is gradual, rather than it being part and parcel of grammar from the onset (cf. Matthiessen and Thompson, 1988). Indeed, we view language as a complex adaptive system, with great variation and gradience, that is, involving synchronic heterogeneity and continuing change over time and along a continuum (Beckner et al., 2009; Bybee, 2010). The grammaticalization of interrogatives as genuine information-seeking-questions to relative clauses in Catalan Sign Language is shown in Figure 1 below, a process that most probably also occurred in other if not most sign languages (cf. Kimmelman and Vink, 2017).

We argue that relative clauses emerged from topic constructions that became specialized in identifying one or more entities from a group. In fact, some scholars have claimed the difficulty or impossibility of distinguishing between non-manual signs used for topicalization and relativization in American Sign Language (Liddell, 1978; Coulter, 1983). This ambiguity, which is also observed in Catalan Sign Language, seems to indicate that topicalization and relativization are related, fuzzy categories along a continuum. Relativization still seems to be in a process of grammaticalization in many signed languages, as indeed suggested by its overall formal overlap with topicalization (e.g. also in its general preference for sentence-initial position). Together with Jarque’s (2016) survey of grammaticalizing and gram-

Figure 1. From sign-in-interaction to grammar.

matalized fictive questions in signed languages, we further suggest a fundamental role of fictive interaction in the creation of several common grammatical constructions and, by extension, in the emergence of linguistic structure more generally. We hope to have shown that the fundamentally interactional dimension of language is reflected in its very structure (cf. Zlatev et al., 2008; Verhagen, [2005] 2010; Pascual, 2014). Hence, shared intentionality and intersubjectivity, the presumed common denominator underlying the human communication potential that is more or less absent in other species (Enfield and Levinson, 2006; Enfield, 2008), is also at the very core of language structure and use.

Moreover, our bibliographic study of 17 signed languages from different families, enriched with a qualitative analysis of own naturalistic data from Catalan Sign Language, seems to show that there is a relation between the level of grammaticalization of intersubjective constructions and the presence and widespread use of a written code (cf. Pascual, 2014; Jarque and Pascual, 2015, 2016; Jarque, 2016). Indeed, fictive questions seem to be more frequent and unmarked in signed languages (lacking a written code, but see attempts to create a unifying one in e.g. Boutet et al., 2018 and Doan et al., [2017] 2020) than in spoken languages with a fully established writing system (Coulter, 1979, 1983; Liddell, 1980; Janzen, 1999; Janzen and Shaffer, 2002; Pfau and Steinbach, 2004; Pfau and Quer, 2010; Morales-López et al., 2012, and see overview in Jarque, 2016). Fictive questions are however not as fully grammaticalized in signed languages (generally used by literate communicators) as in spoken languages without a written code or without widespread writing (Haiman, 1978; Pascual, 2014: 29–57; de Vries, p.c.).

Lastly, exploring the relation between language structure and its mode of use (signed vs. spoken; written vs. used in intersubjective interaction) sheds some light on one of the most fundamental and most dividing question in Linguistics research today, namely that of the innate vs. acquired nature of language. To be sure, if what may very well be a universal construction (fictive questions) mirrors conversation, as the universal and most common way in which language is used (Sacks, 1992; Clark, 1996), thanks to the ‘interactional engine’ that defines our hyper social species (Levinson, 2006), then the phenomenon can be accounted for without having to appeal to a Universal Grammar as a linguistic-only module or even gene that is separate from the rest of human cognition. Similarly, if grammatical embedding, as in relative clauses, is gradual, originally emerging from sequential turn-taking, and if it is more grammaticalized in languages without (widespread) writing, then the structure of grammar primarily mimics its mode of usage rather than some context-independent, sui-generis linguistic pattern.

Conclusions

In this paper we argued that the question-answer interactional structure constitutes the formal skeleton for several unmarked constructions, grammaticalized (or in a process

of grammaticalization) as well as pragmaticalized ones, in a large number of unrelated signed languages. Indeed, non-information-seeking questions seem to constitute fundamental building-blocks of the discourse, syntax, and semantics of signed languages. More specifically, we showed that non-manual marking (i.e. eyebrow raising for both genuine questions and relativization) is critical in the syntax and discourse of Catalan Sign Language and most other signed languages studied so far. Non-manual marking is often the only grammatical means of distinguishing between given clause types and also the only means of marking information flow. In fact, if a signed language has manual and non-manual markers for a construction, the non-manual marker is the preferred one, being either the most common or the obligatory option. This is non-trivial, since non-manual marking originated in multimodal, interactive communication in the surrounding spoken community. This shows that gesture accompanying language in the majority spoken language may become grammaticalized as a sign in the signed language of that community (see also Kocab et al., 2013).

The widespread occurrence of the fictive question-answer pattern in a large number of unrelated languages of the world, spoken and signed (Pascual, 2014: 29–57; Jarque, 2016), seems to indicate that this might be a universal phenomenon of thought and language, reflecting the primacy of face-to-face conversation. This entails that hypotaxis (grammatical embedding, as in relative clauses) has its origin in parataxis, which in turn originates in conversational exchanges. This is further demonstrated by the relation between the level of grammaticalization of this interactional structure and orality. In sum, we argue that the complexity and structural similarities between unrelated languages seem to be partly due to social and interactional universals, which are necessary for –though not exclusive to– language (cf. Enfield and Levinson, 2006; Zlatev, 2007; Enfield, 2008; Arbib, 2012; Pascual, 2014). Consequently, language universals, if any, should have a conversational and thus a social rather than a biological basis.

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Appendix 1

Table A1. Transcription conventions.

Symbols	Function
DOG	Uppercase indicates sign language glosses
1-EXPLAIN-2	Numbers indicate points in the signing space used in pronominalization
IX	‘IX’ stands for a pointing sign
[]	Square brackets indicate the scope (i.e. onset and offset) of a particular non-manual marker
CAR-MOVE	A hyphen signals a multi-morpheme or multi-componential sign
g	Gesture
p	Prosodic break
PRO	Pronoun
PLU	Plural
POSS	Possessive
PCL	Plural semantic classifier