

Surprise!

Gestures in Italian and Italian Sign Language (LIS) expressing surprise and surprise-disapproval

Erika Petrocchi
CreteLing 2019 (Crete)
18. 07. 19

Theoretical Questions

- ❖ Are counter-expectational and surprise-disapproval questions in LIS characterized by a peculiar intonation?
- ❖ Are counter-expectational and surprise-disapproval questions in LIS characterized by a peculiar gestural pattern?
- ❖ Are there manual co-speech gesture along with signs?
- ❖ What is the syntactic representation of these structures in LIS?

Abstract

In this work I argue in favor of an integrated model of syntax, prosody and gesture in Italian Sign Language (LIS) for two kinds of special questions: counter-expectational and surprise-disapproval questions. I capitalize on work by Giorgi & Dal Farra (2018) on oral languages and consider the interaction of these three components in LIS, a language realizing prosody by means of a different modality (non-manual components), paying attention also to the presence of **gestures** accompanying **signs**. Furthermore, in order to investigate the cross-linguistic and cross-cultural nature of the gestural component, I conducted a pilot study on the realization of the same sentences in non-western languages: Vietnamese, Korean, Japanese.

Background

Counter-expectational and surprise-disapproval QS

Dal Farra & Giorgi (2018); Giorgi & Dal Farra (2019); Dal Farra, Giorgi & Hinterhölzl (to appear):

- Prosody**
 - The distribution of pitches: the most common is a pitch on the verbal form, which is an emphatic pitch crucially different from contrastive accents and other focus accents.
 - The prosody differs from the ones of neutral questions
- Gesture**
 - Counter-expectational surprise questions**
 - PUOH manual gesture (Palm-Up Open Hand, Kendon 2004);
 - raised and/or furrowed brows;
 - movement of the head
 - Surprise-disapproval questions**
 - PUOH, artichoke or Hands in Prayer manual gestures → all iterated;
 - furrowed brows;
 - movement of the head



PUOH gesture. From Giorgi, Dal Farra, 2019, Fig. 2



Respectively, PUOH, artichoke, Hands in Prayer iterated gestures; from Giorgi, Dal Farra, 2019 Fig. 9, 10

- Alignment**
 - Alignment between prosody and gesture:** the stroke of the hand gesture, and or the nod of the head, is realized in correspondence with the nuclear pitch of the verbal form.
 - The input to the sensorimotor component for prosody and gesture realization is unique,** i.e. that they both are triggered by the same syntactic property, i.e. **the left peripheral Evaluative head** – a prosody/gesture-oriented head in the sense of Giorgi (2014) – which has scope on the whole sentence.
- Syntactic Properties (Giorgi 2016; 2018):**
 - Introduced by *ma (but)*, which qualifies as a **discourse head**;
 - In the scope of an **evaluative head**;

[DIS [CP1 ...] [DIS ma [EVAL [WH [CP2 non mangiavi solo frutta]]]]

[DIS [CP1 ...] [DIS ma [EVAL [WH che [CP2 fai]]]]

Contact Information

Erika Petrocchi
Ca' Foscari University, Venice
erika.petrocchi@unive.it

Methods and Materials

1. The data

Counter-expectational surprise Qs

Context

I know that you are on a diet and decided to eat only fruit. One day I see you eating a big hamburger. I am **SURPRISED** and utter:

(1) Ma non mangiavi solo frutta?
But not eat-imp-2p only fruit?
'But weren't you eating only fruit?'

Surprise-disapproval Qs

Context

I see Gianni wearing his best trousers kneeling in the dirt in the garden. I think he will ruin his trousers. I am **ANNOYED** and utter:

(2) Ma cosa fai?
But what (you) do-pres-2ps
'But what are you doing?!'

2. Experiments 1 & 2 (LIS; Korean, Vietnamese, Japanese)

- Sample:** two native Italian/LIS bilingual consultants (pilot work) (Exp. 1); three native speakers (pilot work) (Exp. 2)
- Elicitation task:** I read 5 specific contexts meant to introduce counter-expectational/surprise-disapproval value. After each context the signer was asked to sign an appropriate sentence as a reaction to that context. The only instruction was: 'Sign it in the most natural way'. This task was proposed only to signers.
- Repetition task:** I read 5 specific contexts meant to introduce counter-expectational/surprise-disapproval value. After each context, the signer/speaker was presented with the sentence she had to produce. The sentences were presented in a written form (Italian) without punctuation, to do not suggest a particular prosodic contour. The only instruction was: 'Sign/Say it in the most natural way'. In the case of non-western languages, the task has been previously discussed with native speaker consultants. They also translated the target sentences proposed, judging them as appropriate to the same contexts in their languages as well.
- Procedure:** The consultants were video-taped, and the resulting videos have been annotated with ELAN. In the case of the speakers, the audio files have been extracted and annotated with Praat and the ToBI system.

Results (1)

Context

You know that your friend Gianni is on a diet and decided to eat only fruit. One day you see him eating a big hamburger. You are **SURPRISED** and sign:

(3) (IX_{2p}) MANGIARE PANINO

(Tu) mangi un panino?
'Are you eating that sandwich?'

(Elicitation task)



Fig.1 Counter-expectational Qs (LIS)

Context

You see your brother wearing his best trousers kneeling in the dirt in the garden. You think that he will ruin his trousers. You are **ANNOYED** and sign:

(5) NO IX-loc artichoke SPORCO IX-loc

No (ma che fai) è sporco li?
'No (what are you doing?) it's dirty?'

(Repetition task)



Fig.3 Surprise-disapproval Qs (LIS)

Context I

You know that your friend Gianni is on a diet and decided to eat only fruit. One day you see him eating a big hamburger. You are **SURPRISED** and sign

(1) IX_{2p} DIRE (MANGIARE) SOLO FRUTTA

'Did not you tell me that you only eat fruit?'

(Elicitation task)

Co-occurrence of values



Fig. 6 Hands in Prayer gesture (LIS)

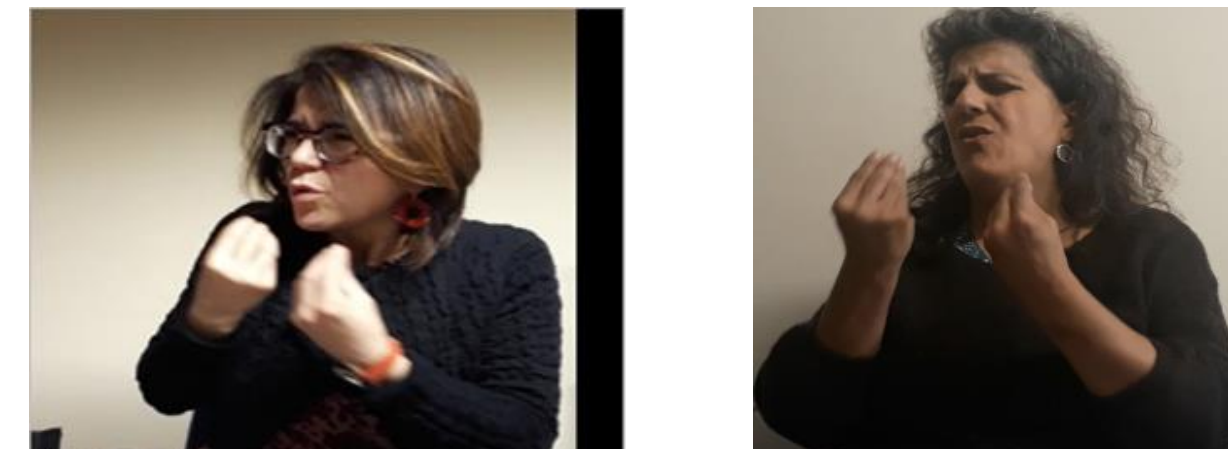


Fig. 7 Artichoke gesture (LIS)



Fig.2 Neutral yes/no Qs; from https://www.spreadthesign.com/it.it/search/08/07/19



Fig.3 a Neutral content Qs; from https://www.spreadthesign.com/it.it/search/08/07/19 "QUANDO?"



Fig.5 Artichoke gesture produced in the same context after the sign in Fig. 4

Context	Furrowed eyebrows; squinted eyes; neutral mouth	Raised brows; widened eyes; lips downwards	Furrowed brows; lips downwards; neutral eyes	Artichoke	Hands in Prayer
Surprise-Disapproval Qs (10)	100%	60%	60%	20%	20%
C/E Surprise Qs (10)	50%				
C/E Surprise Qs with disapproval value		50%	30%	20%	

Conclusions

- Peculiar prosodic contour: **emphatic raised brows, widened eyes, corner of the lips downwards** (counter-expectational Qs); **emphatic furrowed brows, squinted eyes, neutral mouth** (surprise-disapproval Qs). In non-western languages, these structures present a peculiar fading intonation.
- The maximum extension of facial expression in LIS is **aligned** with the nuclear syllable of the verbal form (I only textured monosyllabic verbs) and with the movement of the head (which has no morphological neither syntactical function in these cases). In non-western languages the only gestures found are raised eyebrows and movement of the head. These gesture turn out to be aligned with the introductory particle in most of the cases.
- Two of the three manual co-speech gestures** found in oral languages are present in LIS as well. These gestures are not part of the preceding sentence, in that the signal of the end of the intonational units are present (before the gesture): changing in the gaze direction, head position and facial expression (which is less emphatic). They neither do not take part of the following intonational unit. Moreover they are not recognized lexemes and are not used as classifiers. It is plausible to hypothesize that their are actual co-speech gesture.
- The presence of the non-manual marking (regularly activated in timing, onset and duration) on the entire sentence** in LIS is compatible with the syntactic model proposed by Giorgi (2018) for oral languages. The non-manual marking start from the left periphery - triggered by the Eval projection - and take in its scope all the sentence.

Future Directions

- ❖ **How linguistic and paralinguistic functions interact in signed languages?**
- Sign languages exploit the same visual signals available to speakers (Dachkovsky, Sandler 2009) organizing them into a **prosodic system** (e.g., Wilbur, 1991, 2000, for American Sign Language; Nespov & Sandler, 1999, and Sandler, 1999a, 1999b, for Israeli Sign Language; van der Kooij, Crasborn, & Emmerik, 2006, for Sign Language of the Netherlands).
- As in spoken communication (Keltner, Ekman, Gonzaga, Beer 2003) these visual signals convey also **paralinguistic meaning** (Campbell, Woll, Benson, Wallace 1999; McCullogh, Emmorey, Sereno 2005).
- ❖ **Are there invariants in the facial configurations expressing basic emotions?**
- 'Primary emotions' are considered universally expressed in similar ways in Psychology (Ekman 1973; 1993; 1999; Izard 1994; Frijda 1986). I will investigate systematically the expression of surprise and disapproval in sign and non-western oral languages in the same constructions mentioned above. I will conduct a systematic research on the production of monolingual native speakers using the FACS system to annotate the facial muscles implied.

References

BAKER-SHENK, C. (1983). A microanalysis of the nonmanual components of questions in American Sign Language. Berkeley, CA: University of California, CINQUE, G. (1999). Adverbs and Functional Heads. Oxford: Oxford University Press. DACHKOVSKY, S. (2005). Facial expression as intonation in ISL. The case of conditionals. In J. Quer (Ed.), *Leading research in Sign Languages* (pp. 81-82). Amsterdam: Sponner Press. DAL FARRA, C. (2018). Surprise: syntax, gesture and prosody go hand in hand. Conference for International Society for Gesture Studies. <http://www.isgss2018.com/>. DAL FARRA, C., GIORGI, A., HINTERHÖLZL, (2018). Syntax, Prosody and Gesture in expressive surprise: Workshop on Evaluative Meaning: Theoretical and computational perspectives. <https://www.isgss2018.com/isgss2018-workshop-on-evaluative-meaning-theoretical-and-computational-perspectives/>. EKMAN, P. (1973). Cross-cultural studies of facial expression. In P. Ekman (Ed.), *Darwin and facial expression: A century of research in review* (pp. 169-222). New York: Academic Press. EKMAN, P. (1979). About brows: emotional and conversational signals. In M. von Cranach, K. Fogga, W. Levelt, & D. Plog (Eds.), *Human ethology: Claims and limits of a new discipline* (pp. 169-202). Cambridge: Cambridge University Press. EKMAN, P. (1993). Facial expression and emotion. *American Psychologist*, 48(4), 384-392. EKMAN, P., & FRIESEN, W. V. (1978). Facial action coding system. Palo Alto, CA: Consulting Psychologists Press. EKMAN, P., FRIESEN, W. V., & HAGER, J. C. (2002). Facial Action Coding System. Salt Lake City, UT: Research Neuus FRIDA, N. (1986). The emotions. Cambridge: Cambridge University Press. GIORGI, A. (2016). On the temporal interpretation of certain surprise questions. *SpringerPlus*, 5:1390. DOI: 10.1186/s40064-016-0363-8. GIORGI, A., DAL FARRA, C. (2019). On the syntax/pragmatics interface: expressing surprise and disapproval. In *Intercultural pragmatics*. DeGruyter Mouton. GIORGI, A. (2018). Ma non era rosso? (But wasn't it red?). On counter-expectational questions in Italian. In L. Repetti, F. Ordoñez (eds.), *Selected papers from the 46th Linguistic Symposium on Romance Languages (LSRL)*. New York, John Benjamins: 69-84. GIORGI, A. (Forthcoming). On surprise questions and surprise-disapproval exclamations introduced by adverbials ma (but), syntax, prosody and gesture. *EMILIO, C. L.* (1994). Intense and universal facial expressions: Evidence from developmental and cross-cultural research. *Psychological Bulletin*, 115(2), 288-299. KRIVON, A. (2004). Gesture: visible action as utterance. Cambridge: Cambridge University Press. NESPOV, N., & SANDLER, W. (1999). Prosody in Israeli Sign Language. *Language and Speech*, 42, 143-176. PIERREHUMBERT, J., & HIRSCHBERG, J. (1990). The meaning of intonational contours in interpretation of discourse. In F. B. Colwell, J. Kangas, & A. E. Pollard (Eds.), *Intonations in communication* (pp. 273-313). Cambridge, MA: MIT Press. REILLY, J. S., MORTREFF, M., & HILLGATE, L. (1990b). Faces: The relationship between language and affect. In V. Volterra & C. J. Erting (Eds.), *From gesture to language in hearing and deaf children* (pp. 128-141). Berlin: Springer-Verlag. SANDLER, W. (2003). Prosodic continuity and intonation in a sign language. *Linguistische Berichte*, 13, 39-58. SANDLER, W. (2006). Iconic mouth gestures in Israeli Sign Language. *PANORAMA* presented at the annual meeting of the Linguistic Society of America, Albuquerque, NM, U.S.A. SANDLER, W. (2009). Syntactic combinatorial by hand and mouth in sign language. *Semiotica*, 174(1/2), 245-275. SANDLER, W., & BELLO-MARTINI, D. (2006). Sign language and linguistic universals. Cambridge: Cambridge University Press. SCHLEWINKA, P. (2008). Gesture projection and co-speech gestures. *Linguistics and Philosophy*, 41, 1, 295-365. WILBUR, R. B. (2000). Phonological and prosodic layering of non-manuals in American Sign Language. In K. Emmercy & H. Lane (Eds.), *The signs of language revisited*. Mahwah, NJ: Lawrence Erlbaum Associates. Pp. 215-267. WILBUR, R. B., & PATWICK, C. (1999). Syntactic correlates of Brow Raise in ASL. *Sign Language & Linguistics*, 2, 3-30.