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## The SIGN-HUB project has come to an end: our results!



Welcome to the fourth newsletter of the SIGN-HUB project!

Our project is over. After 4 years of hard and exciting work, we are proud to share our results in the following areas:

- i. we have gathered existing descriptions and produced novel descriptions of many linguistic phenomena of the **grammar** of 6 sign languages;
- ii. we have sent out questionnaires to collect more than 100 grammatical categories for the **ATLAS** that

will allow us to compare sign languages from all around the world;

- iii. we built **assessment tools** for 5 sign languages;
- iv. we collected 137 **interviews** and produced a **documentary** containing the memories of Deaf signers from 7 countries;
- v. we have developed the **digital platform** that hosts all the contents, making it freely accessible to the public.



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## Digital grammars are ready for launch!

With the help of our deaf collaborators, we spent the last year improving our grammars and adding new content with more linguistic descriptions and visual examples. We also finalized the guidelines for conventions used in all the grammars. We are now in the last phase of uploading the grammars onto the SIGN-HUB platform.

### Grammars are freely accessible

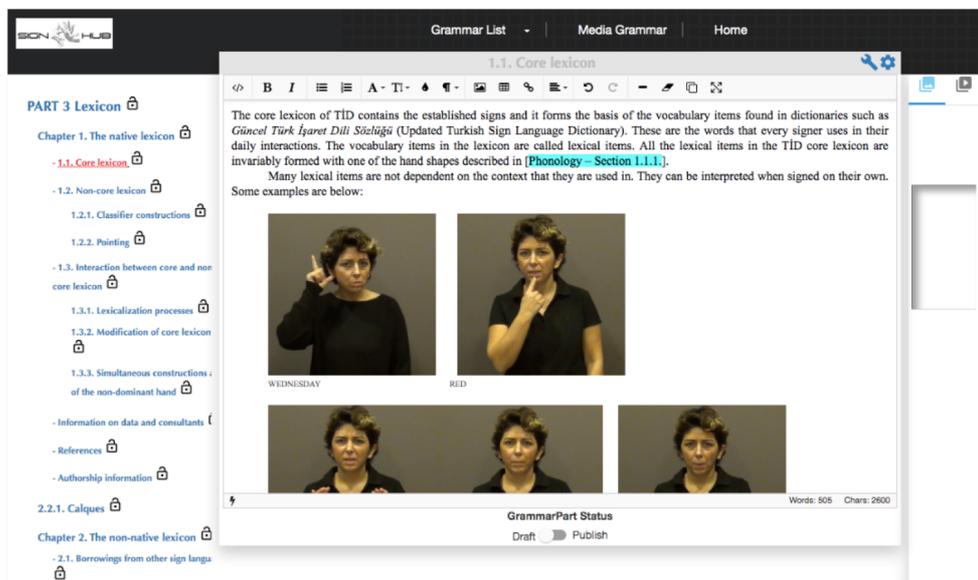
The grammars of six sign languages (Catalan, German, Italian, Spanish, Turkish Sign Languages and Sign Language of the Netherlands) are on the SIGN-HUB interactive digital platform, freely accessible for anyone. They consist of six parts: Socio-historical background, Phonology, Lexicon, Morphology, Syntax and Pragmatics, with

many chapters in each part. The size of each grammar varies due to the differences in the number of studies that were already done on each language before the project as well as to the different resources available in each team. However, we can report that if these grammars were printed instead of being digital, the total number of pages of six grammars would be approximately 2000 pages with 6000 visual examples (still photos and videos) in total. We believe that the availability of a large number of visual examples, especially videos and gifs in the grammar books of sign languages will benefit future users (students, teachers, researchers, etc.) tremendously.



## Grammars on the platform

Writing these six sign language grammars has not been the sole purpose. SIGN-HUB has aimed at developing a platform that can host more grammars in the future. To this end, the platform has been developed with two major functionalities. One is a tool that writers can use to create digital sign language grammars. This is a document editing software application with various formatting features for text editing and with tools that enable writers to store and to insert visual examples. It also includes the complete Table of Contents of the *SignGram Blueprint* with built-in chapters and section headings. The other functionality is the design and space that can host sign language grammars that will be written even after the end of the project. The grammars created on the SIGN-HUB platform (or parts of them) will be available for viewing online but they can also be converted to pdf files and downloaded.

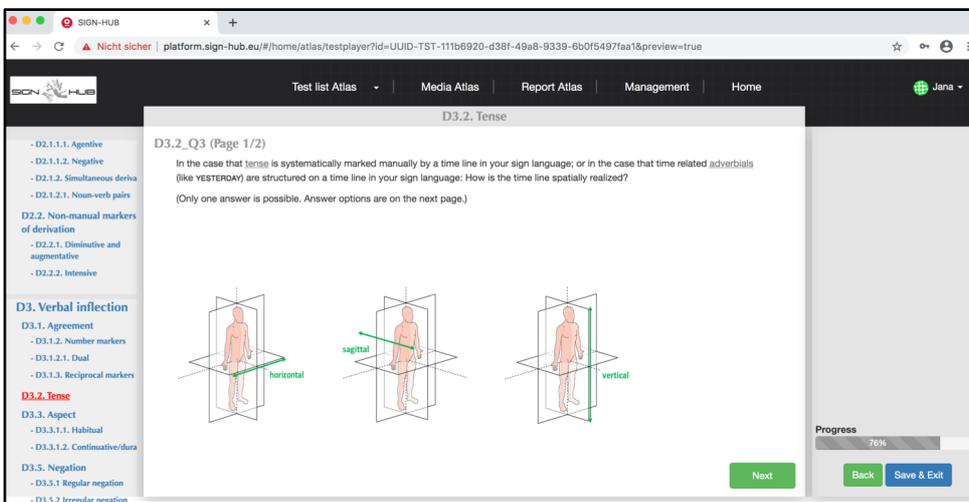


A screenshot of the editing process of the digital grammar of Turkish Sign Language (TİD) using the grammar tool provided on the SIGN-HUB platform.

## The Atlas of world's sign languages is going wide

The subproject "Atlas of linguistic structures of the world's sign languages" looks back at a very busy year. In 2019, we finalized the development of the software tool for the questionnaires in close collaboration with our technological partner, CINI, and successfully tested and evaluated a pilot of the questionnaire with a small group of selected representative content providers. In parallel, we designed four comprehensive questionnaires on more than 100 socio-

linguistic and grammatical categories covering the following areas: socio-historical background, lexicon, phonology, prosody, morphology, syntax and pragmatics. The questionnaires have been sent out worldwide to sign language experts. We hope to get feedback for at least 50 different sign languages, including well investigated sign languages such as ASL and BSL as well as many less investigated sign languages. The questionnaires as well as the evaluation of the data have been implemented in a way that allows for constant updates in the future.



A screenshot showing a page of the questionnaire on tense in the morphology questionnaire.

## Towards a digital access of the Atlas

The final step of the Atlas has comprised two parts: (i) evaluation of the linguistic data, pictures and videos provided by the content-providers and (ii) design of the interactive visual presentation of the Atlas on the SIGN-HUB online platform. The first part involves the implementation of an automatic tool to create interactive maps on the basis of an underlying data base that have been compiled (and will be updated) with the information sign language experts worldwide have

provided and will provide through the questionnaires. The second part comprises the design of a general structure, maps, presentation of single-choice and multiple-choice

answers, and language specific socio-historical information.



The screenshot shows a 'Table of Content' on the left with categories like Phonology, Sublexical structure, Location, Movement, Two-handed signs, Non-manuals, Mouth gestures, Mouthing, Other non-manuals, Eyebrows, Eye aperture, Eye gaze, Cheeks, Lips, Prosody, Phonological processes, Lexicon, and Morphology. The main area features a world map with colored dots representing sign languages. A legend indicates Group 1 (red), Group 2 (green), and Group 3 (blue). A callout box for 'Ghanaian Sign Language' lists values: 'neutral, head, upper body' and 'Grammar'. Below the map is a table:

Feature – values	Sign languages with this combination
„neutral space“	American SL, Quebec SL
„neutral space“ + „head“ + „upper body“	Ghanaian SL, Brazilian SL, ...
„neutral space“ + „head“ + „upper body“ + „face“	DutchSL, Icelandic SL, Russian SL

A screenshot showing a mockup page of the Atlas.

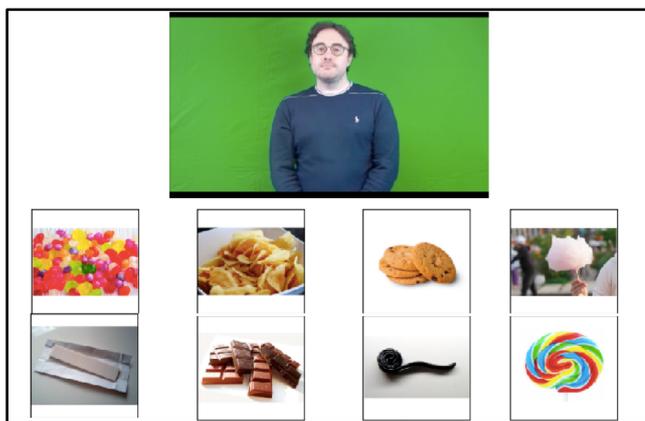
## The results on language assessment are very interesting

In the last phase of the project, the assessment team installed the tests on the platform dedicated to tests administration. For Italy, France, Catalonia and Spain, 9 tests are now available on the platform: 4 lexical tests; 4 syntactic tests and one non-linguistic test. In addition, Italy has also developed one more test for

at least one signing parent);

- early signers (exposed to SL during kindergarten, before the age of 6);
- late signers (exposed to SL at school, between the age of 6 and 15).

Our main goal was to evaluate whether age of first language exposure has an impact on comprehension



A screenshot showing the lexical task with semantic distractors. Participants are invited to watch a sign on a video and select the corresponding picture.

adult signers (repetition task which is not on the platform), and France has adapted two lexical tests and one syntactic test (relative clauses comprehension) to children. We recruited 43 LIS participants, 49 LSF participants, and 45 LSC participants. Recruitment and administration for LSE is ongoing.

For each sign language, participants are divided in 3 groups:

- native signers (exposed to SL from birth and with

and production of the different linguistic phenomena under study. Preliminary results of LIS, LSF and LSC show that that age of exposure does not have an impact on the lexical competence, while it has an impact on core syntactic competences. Native signers perform better on syntactic tasks compared to early and late signers. This is not the case for lexical tasks.



## The Israeli Sign Language (ISL) team

The ISL team proceeded differently from the other teams. Given its expertise on language assessment, the Israeli team started testing before the platform was ready in order to recommend methods to the other teams. The Israeli team also focused on the detection of pathologies and the effectiveness of the various tests for diagnosing them. They reported the first case of syntactic SLI (specific language impairment) in a deaf signer of ISL. The impaired participant showed impaired performance in all of the syntactic tests, which was significantly below that of typical ISL signers. These findings demonstrate that similar types of language impairments may be present in languages of different modalities: spoken or signed. This brings further support to the claim that same brain mechanisms are responsible for the linguistic knowledge for both signed and spoken languages.



### A collection of Deaf memories: the documentary reveals its treasure

With respect to the project component on 'Life stories of elderly Deaf signers', we focused on three main goals in the past year: a documentary movie, an edited volume, and the uploading of interviews to the project platform. Taken together, these outputs provide a fascinating and diverse perspective on cultural, historical, and linguistic aspects of Deaf communities, in particular older members of these communities, an often neglected group. Documenting their stories and experiences is an important contribution to the preservation of this unique cultural heritage, which would otherwise be lost.

### The documentary movie

The 40-minute documentary movie "We were there – we are here" includes short fragments from interviews that were conducted in the context of the project as well as fragments from previously existing materials (from France and Israel). In thematically organized episodes, the elderly signers share experiences from the past – some of them funny, others touching or even confronting – concerning personal relationships, work, education, and historical events. The movie, which offers an unprecedented glimpse at this group, should have had its premiere at the final SIGN-HUB event in Barcelona.

### The edited volume

The edited volume "Our lives – our stories: Life experiences of elderly Deaf signers" includes chapters authored by SIGN-HUB members, based on information collected during the interviews and researchers from outside the project, who work on related issues. The volume, which will be published by De Gruyter Mouton (expected publication date September 2020), thus offers a kaleidoscopic yet homogenous perspective on the life experiences of Deaf elderly signers, including the Second World War in Flanders, schooling in Philadelphia, and military service in Turkey – to name just three of the many aspects addressed in the chapters.



Moments of the interviews to Deaf elderly signers.



### Uploading on the digital platform

While this newsletter is being composed, the uploading of materials to the project platform is ongoing. Within the project, we conducted 137 interviews, all with two cameras – so, there will be a lot of material for uploading. All (parts of) interviews will be linked to metadata, such that the platform will be searchable (e.g., interviews from Italy, interviews with female interviewees, interviews with signers older than 80 years, etc.).



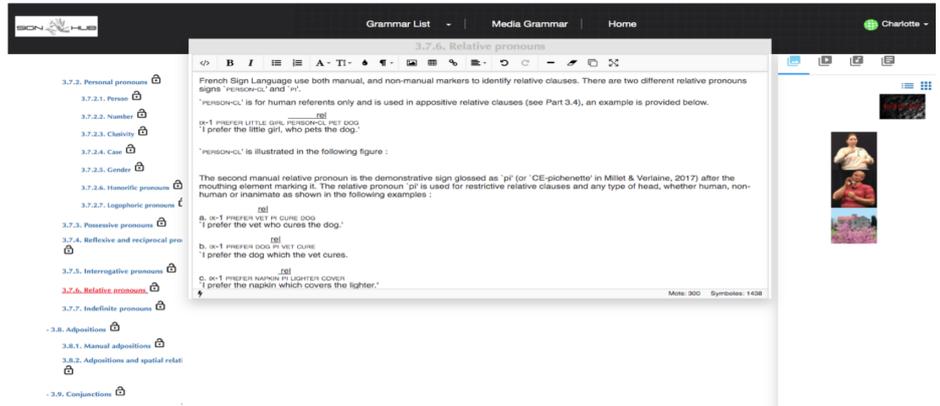
Dovenvreugt ('Deaf's joy'), a home for elderly Deaf people in the Netherlands (1953 - 1971).

## The digital platform is ready

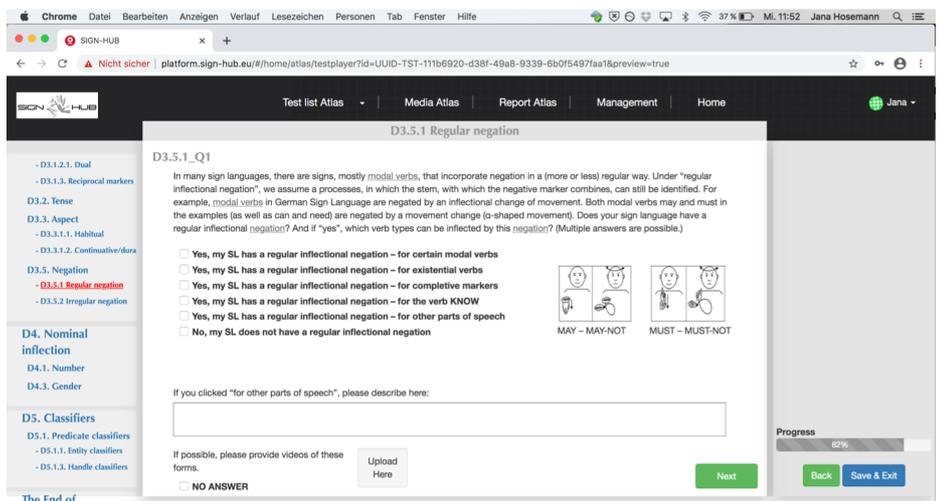
During the last year, we sensibly improved the SIGN-HUB platform. In order to allow the platform host the material produced in the different tasks, our computer scientists worked on the code to solve bugs and improve access to the content.

The Grammar tool is the interface where SL grammar writers are compiling the grammars of DGS, LIS, LSC, LSE and NGT. It works like a word processor and it's on-line!

We worked on the interface to create the ATLAS maps, we implemented the end-user interfaces (i.e., the webpages that you will see at the end of the project). At the moment, we cannot show any typological map because the data collection is still ongoing. What we can show, though, is what the questionnaire looks like.



A screenshot of the interface of the grammar tool.



A screenshot of the questionnaire interface.

## All toys in good order!

The end of the project also meant that we closed up things and put back all toys in good order.

For us, this means that we archived all our materials. To this end, we created a Cloud Closet! We call it the workspace.

Each language has its folder and in each folder we archived the videos created for SIGN-HUB. Every time you will search for a SIGN-HUB video, you will be searching inside this closet. It is the core of our shared memory, where the sad and happy moments of Deaf people's lives are saved.



Project	Type	Date	Status
DGS	collection	08/01/2020 19:04	-
ISL	collection	18/03/2020 20:57	-
LIS	collection	08/01/2020 17:37	-
LSC	collection	08/01/2020 19:03	-
LSE	collection	08/01/2020 19:04	-
LSF	collection	08/01/2020 17:37	-
NGT	collection	08/01/2020 19:03	-
TID	collection	08/01/2020 17:41	-

A screenshot of the Cloud Closet in ORTOLANG.

## WHAT'S NEXT

### Final SIGN-HUB conference

The final SIGN-HUB conference «All hands on deck: sign languages and Deaf communities» should have taken place at Universitat Pompeu Fabra (UPF), Barcelona on March 25-26, 2020 to share the results of the project with the Deaf community, Deaf and hearing researchers and the general public. To our regret, due to the general situation and the spreading of the coronavirus, the event has been cancelled.



More information:

<https://sites.google.com/site/feastconference/conferences/feast-2020-paris?authuser=0>

### The next FEAST conference

The eighth meeting of the Formal and Experimental Advances in Sign language Theory (FEAST) has been the official conference of our research project. It is a regular forum to discuss formal approaches to sign language grammar, experimental approaches to sign languages, and their interaction.

The conference will be accessible to both Deaf and hearing participants through interpreting services between English and International Sign/American Sign Language. FEAST is meant to take place in Paris on June 18-19, 2020, however, in regard to the current world situation, its realization is uncertain and we are considering to either have it fully online, or to postpone it to the Fall of this year. In either case, we want the conference to be held this year. For updates follow our Facebook and twitter pages.

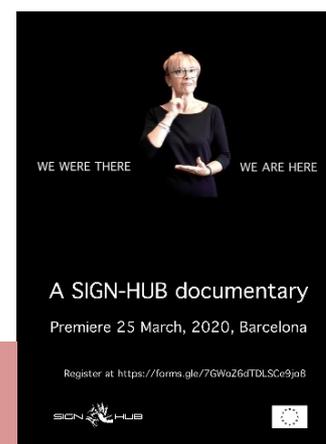


### The screening of the Documentary movie

The documentary movie shows a selection of the interviews to Deaf elderly signers from 7 countries. Deaf signers share their memories on personal events, as well as on work, education and collective European historical events. The premiere screening of the Documentary movie was meant to take place in Barcelona on March 25, 2020. Since the final event won't take place, we plan on organizing screenings of the Documentary in different countries. Check the national websites for Documentary screenings in your country.



See the documentary trailer:  
<https://vimeo.com/375209668>



# SIGN HUB



SIGN-HUB: preserving, researching and fostering the linguistic, historical and cultural heritage of European Deaf signing communities with an integral resource

## The SIGN-HUB website

Visit the project website to get more information on the project, to keep updated on our dissemination activities and results, and to contact us.

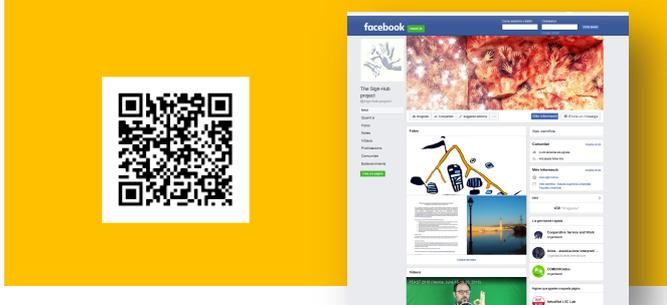
[www.sign-hub.eu](http://www.sign-hub.eu)



## Our Facebook page

To keep updated with our activities, to share your comments and experience with the scientific and Deaf communities visit our Facebook page

[www.facebook.com/sign.hub.project](https://www.facebook.com/sign.hub.project)



Subscribe online to receive the SIGN-HUB Newsletter by writing to [sign-hub@upf.edu](mailto:sign-hub@upf.edu)

## National websites

Visit the project national website of your country:

- Spain: <https://www.upf.edu/web/sign-hub>
- France: <https://sites.google.com/view/signhub/france/>
- Germany: <https://www.uni-goettingen.de/de/546745.html>
- The Netherlands: [www.uva.nl/sign-hub](http://www.uva.nl/sign-hub)
- Italy: <http://www.sign-hub.it/>
- Turkey: <https://signhub.boun.edu.tr/en>
- Israel: <http://www.tau.ac.il/~naamofr/sign-hub/index.html>



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