

■ Configurations d'Eccarius & Brentari  
Eccarius & Brentari's handshapes

■ Autres configurations potentielles  
Other potential handshapes

Les langues des signes (LS) pratiquées par les personnes sourdes sont des langues visuelles et gestuelles. La configuration des doigts, le placement des mains dans l'espace, leurs mouvements ou l'expression du visage sont autant d'éléments qui composent, par leur déroulement multilinéaire dans le temps, le vocabulaire et la syntaxe de ces langues. Ce sont aussi des langues sans écriture. L'objectif de l'équipe Gestual Script est de concevoir une véritable écriture manuscrite et tapuscrite de manière à ce que la population sourde et les personnes qui s'intéressent aux LS – et notamment à la langue des signes française (LSF) – puissent en disposer. Un tel système vise de nombreuses applications pédagogiques, culturelles, ou scientifiques.

Le projet TYPANNOT a pour but de représenter graphiquement les différents paramètres composant la langue, ce qui est une étape nécessaire avant la conception de l'écriture elle-même. L'étude des LS suppose de pouvoir analyser des enregistrements vidéo grâce à des transcriptions. N'ayant pas d'écriture, la transcription des LS s'avère

être une tâche complexe et difficile. Elle requiert des outils numériques spécifiques qui permettent la saisie, la recherche et l'échange de données à la fois multilinéaires et multidimensionnelles.

TYPANNOT est conçu pour devenir un système graphématique et typographique complet : règles de composition, police de caractères, codage et interfaces de saisie. Son approche innovante associe chercheurs en linguistique et designers autour d'un mode de conception et d'usage reposant sur de multiples analogies : visuelles, gestuelles, spatiales. Cette posture originale se justifie par le fait sans précédent qu'une langue et son écriture pourraient partager les mêmes modalités gestuo-visuelles – le signe de la langue et le signe graphique. Essentiellement, le locuteur pourrait retrouver sa langue dans l'acte de tracer et « lire » son geste en même temps qu'il l'écrit.

Gestual Script : Claudia S. Bianchini, Dominique Boutet, Adrien Contesse, Claire Danet, Patrick Doan, Timothée Goguely, Morgane Rébular.

Sign languages (SL) are visuo-gestural languages used by deaf people to communicate with each other. Their syntax and vocabulary are made up of a combination of hand shapes, hand locations, hand gestures and facial expressions. SL are also languages that lack a formal writing system. The goal of TYPANNOT is to develop a writing system that can be typed and hand written, making it available to French sign language (FSL) speakers and researchers. It is intended as a pedagogical, cultural and scientific tool.

TYPANNOT aims to develop both graphical and typographical solutions for representing the parameters of SL. A necessary process in itself if we are to develop a writing system. Studying SL entails analysing video recordings of various SL enunciations through a process of transcription. Due to the lack of any formal writing system, this becomes a complex task. Specific

digital tools are necessary to allow for data input, research and exchange of multilinear and multidimensional information.

TYPANNOT will provide a complete typographical environment that integrates graphic rules, fonts, encoding and input interfaces. This is an innovative project bringing together linguistic researchers and designers to provide real world solutions based on visual, gestural and spatial analogies. We believe that through this unique approach, SL speakers will be able to share common traits between speech and writing, gesture and graphic sign. SL speakers could then ultimately be able to recognize their language through the act of tracing and reading gestures transcribed by the system.

Gestual Script: Claudia S. Bianchini, Dominique Boutet, Adrien Contesse, Claire Danet, Patrick Doan, Timothée Goguely, Morgane Rébular.

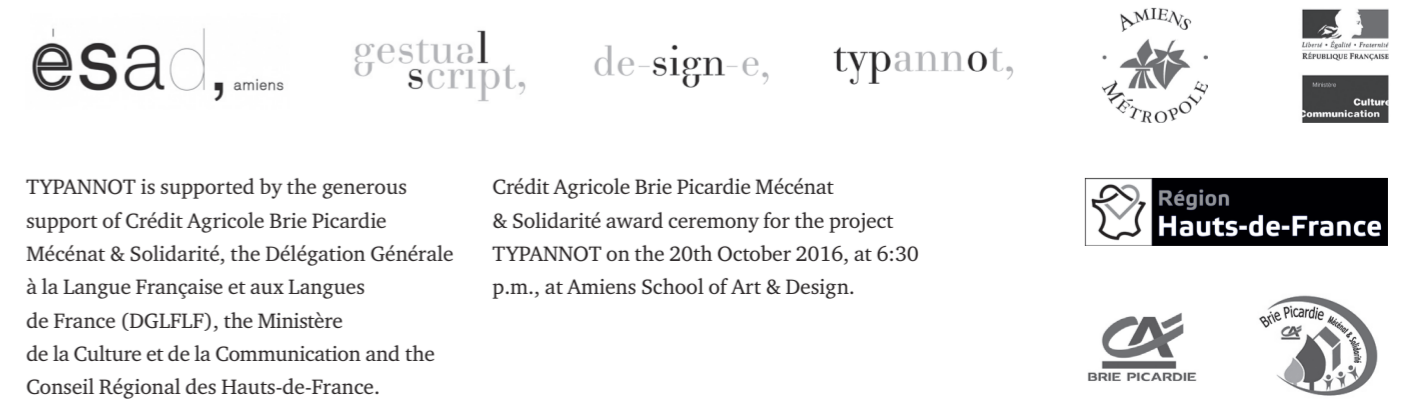
TYPANNOT bénéficie du mécénat du Crédit Agricole Brie Picardie Mécénat & Solidarité. Le projet est également soutenu par la Délégation Générale à la Langue Française et aux Langues de France (DGLFLF) du Ministère de la Culture et de la Communication, et par le Conseil Régional des Hauts-de-France.

Remise du prix du Crédit Agricole Brie Picardie Mécénat & Solidarité pour le projet TYPANNOT le 20 octobre 2016, à 18h30, à l'École supérieure d'art et de design d'Amiens.

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TYPANNOT is supported by the generous support of Crédit Agricole Brie Picardie Mécénat & Solidarité, the Délégation Générale à la Langue Française et aux Langues de France (DGLFLF), the Ministère de la Culture et de la Communication and the Conseil Régional des Hauts-de-France.

Crédit Agricole Brie Picardie Mécénat & Solidarité award ceremony for the project TYPANNOT on the 20th October 2016, at 6:30 p.m., at Amiens School of Art & Design.



### 2 Structures for Representing Handshape and Local Movement at the Phonemic Level

SCOTT K. LIDDELL

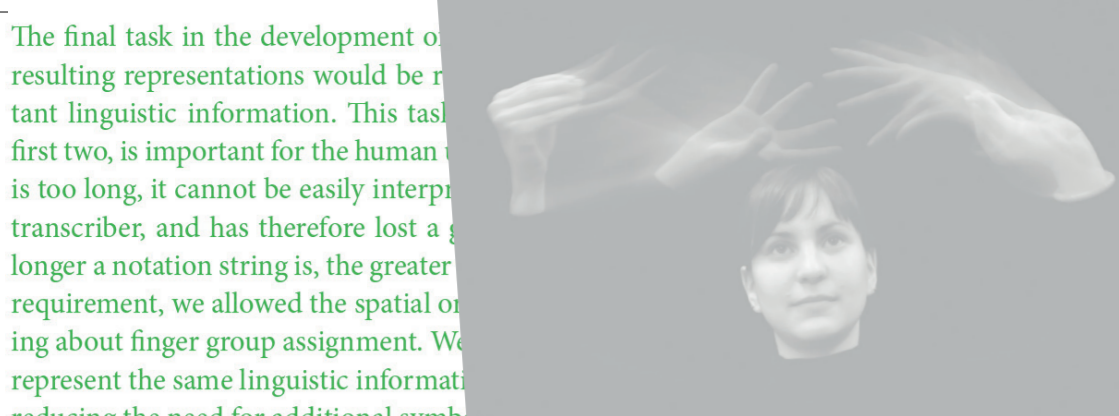
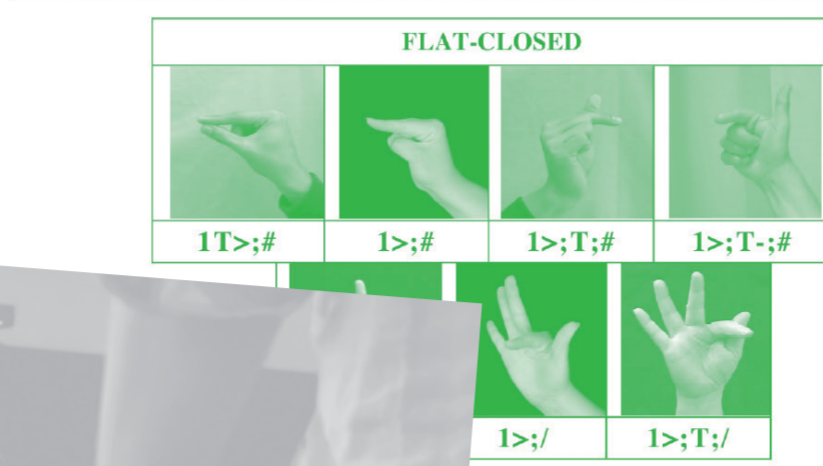
#### 2.1 Introduction

Phonetic representation systems and distinctive features used with spoken languages cannot be used to describe sign languages. As a result, researchers have had to develop their own representation systems to describe signs phonemically. This system divides signs into three "aspects": *loc* (location), *des* (what acts), and *sig* (the action). As in all phonemic systems, these three aspects contain only a limited number of possible members of each category. Any given sign is conceived of as being composed of three of Stokoe's "aspects," combined simultaneously, with no internal segmental structure. Stokoe's success at breaking signs into a limited number of abstract parts constituted the first linguistic evidence that ASL was more than just a gesture system.

If signs were not constructed from segments, that would represent a significant difference between spoken languages and signed languages. However, an constructed of sequences of segments. Since then, the usefulness of segmenting signs has been clearly demonstrated (Wilbur 1982, 1985; Johnson and Liddell 1984; Liddell 1984a; Liddell and Johnson 1989; Sandler 1986; Liddell and Johnson 1986a; Corina 1986; Perlmutter, this volume; and Smith, this volume).

Below I will briefly outline two segmental models of sign structure and introduce a third. The first is a phonemic model of sign structure and introduces a third. The first is a phonemic model of sign structure and introduces a third.

# Eccarius & Brentari's formula



The final task in the development of resulting representations would be to represent linguistic information. This task is the first two, is important for the human is too long, it cannot be easily interpreted by a transcriber, and has therefore lost a longer a notation string is, the greater requirement, we allowed the spatial organization about finger group assignment. We represent the same linguistic information by reducing the need for additional symbols.

The organization of the system can be seen in the basic organization of characters which is the organization of the finger groups in the handshape. The basic organization with symbol slots, written in a particular order.

At the beginning of the string, there is a symbol for the thumb's base symbol. The first of these, adjacent to the symbol for the thumb, is available for the 'unopposed' symbol. The second joint slot is available for the 'spread' and/or 'crossed' symbols, which receive their own symbols. The final slot in the string is for the remaining joint symbols (i.e. those representing degrees of freedom).

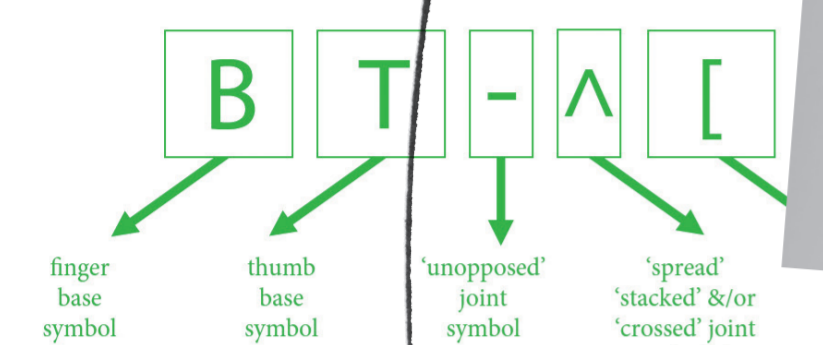
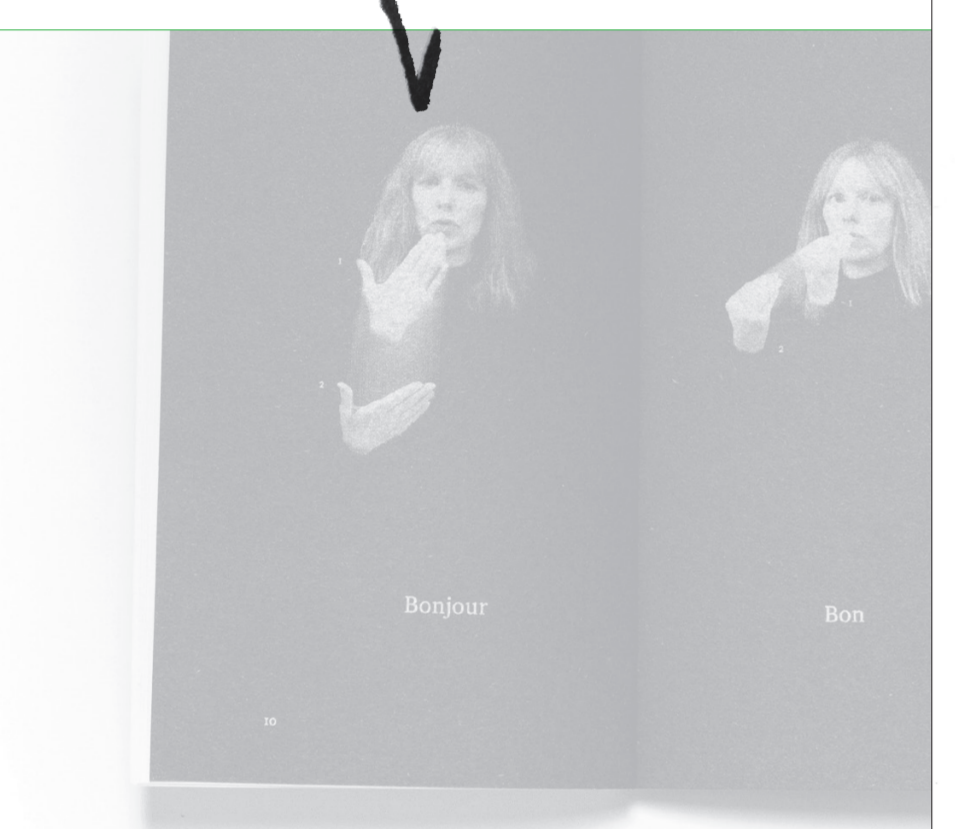


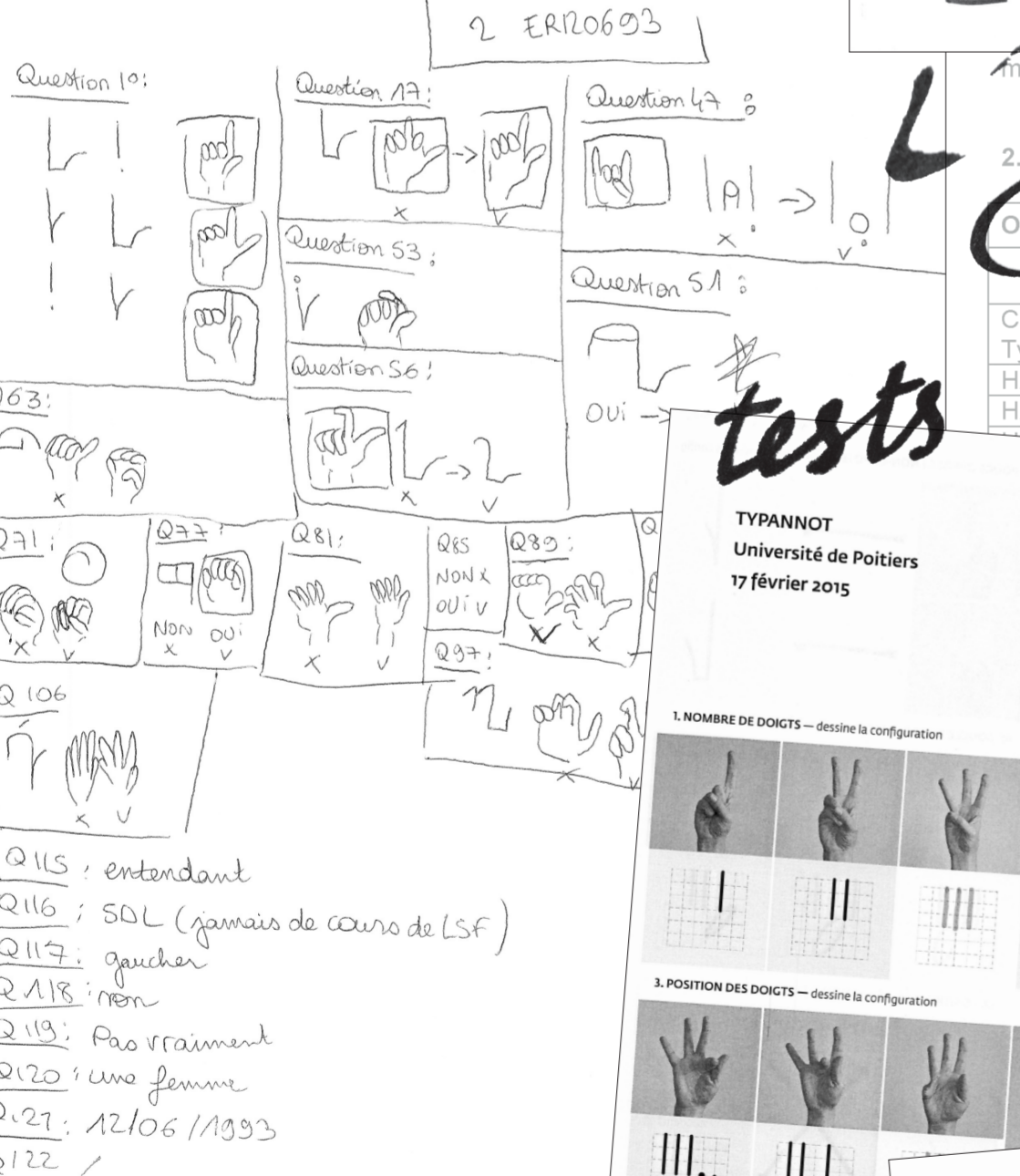
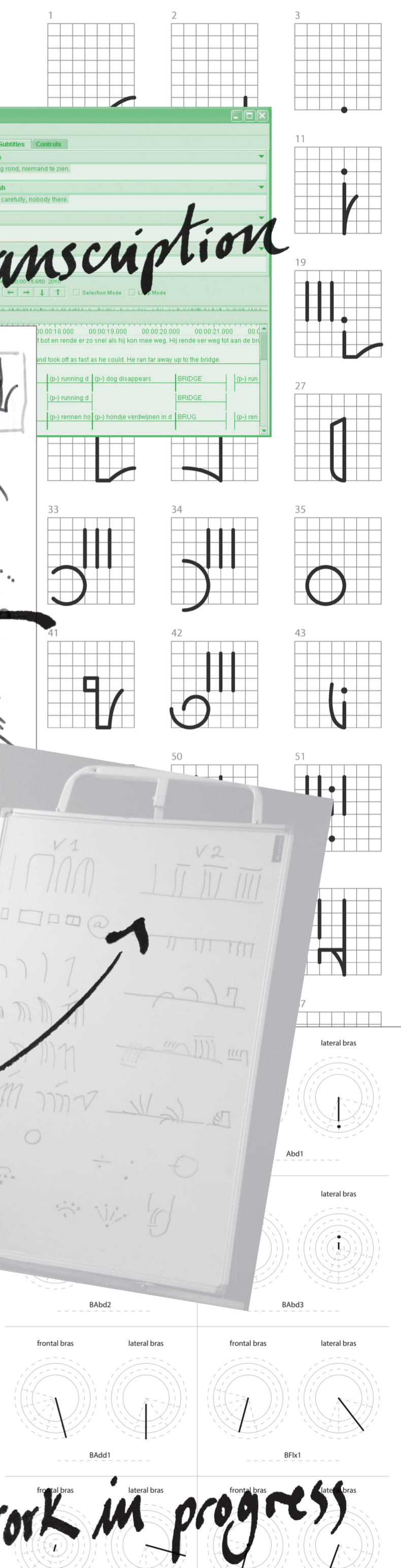
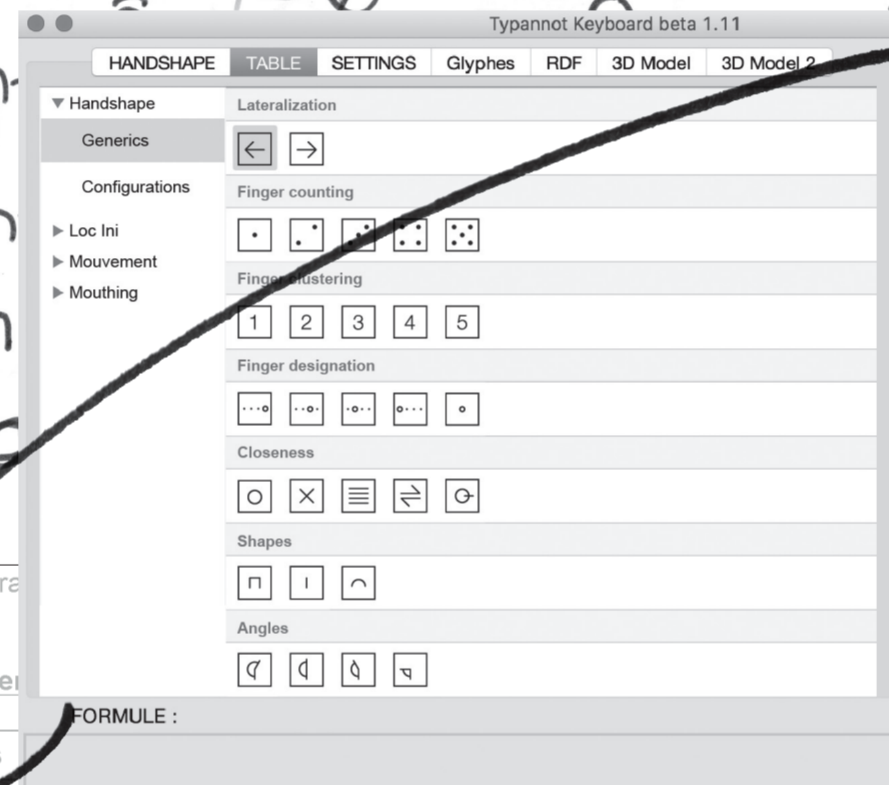
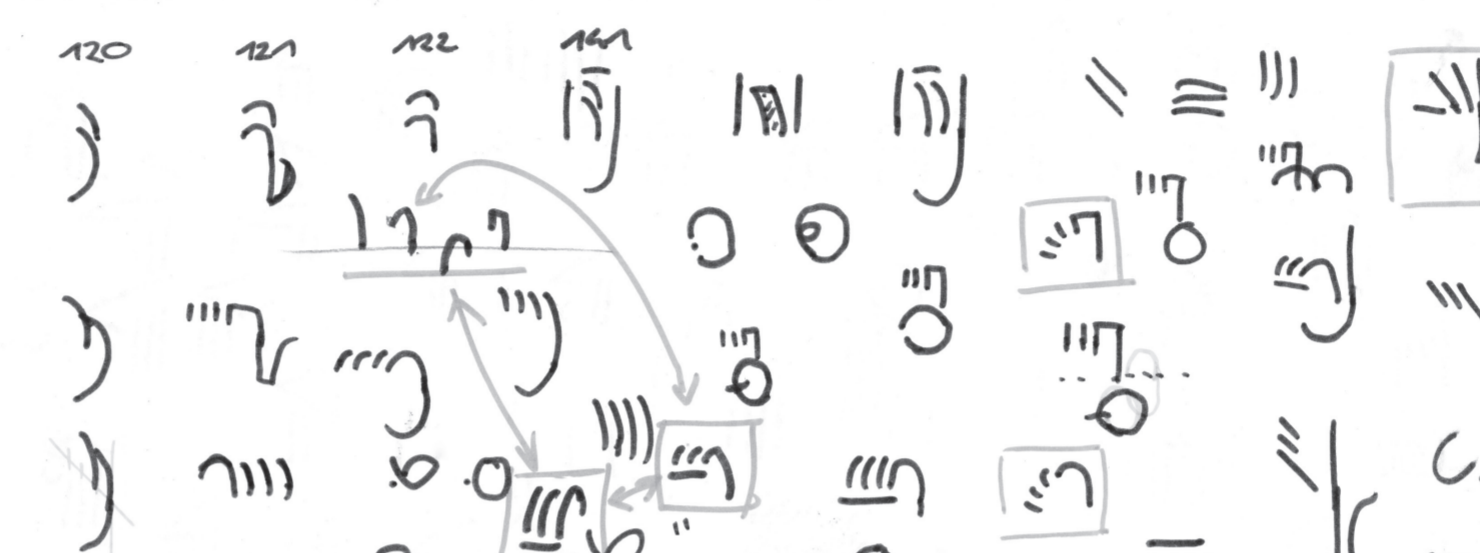
Figure 2. Basic organization of notation (order of base and joint symbols).



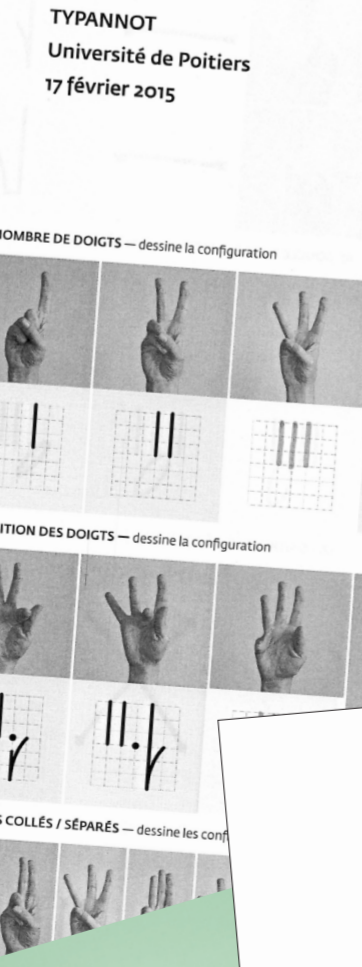
## experiment



## SL transcription



## tests

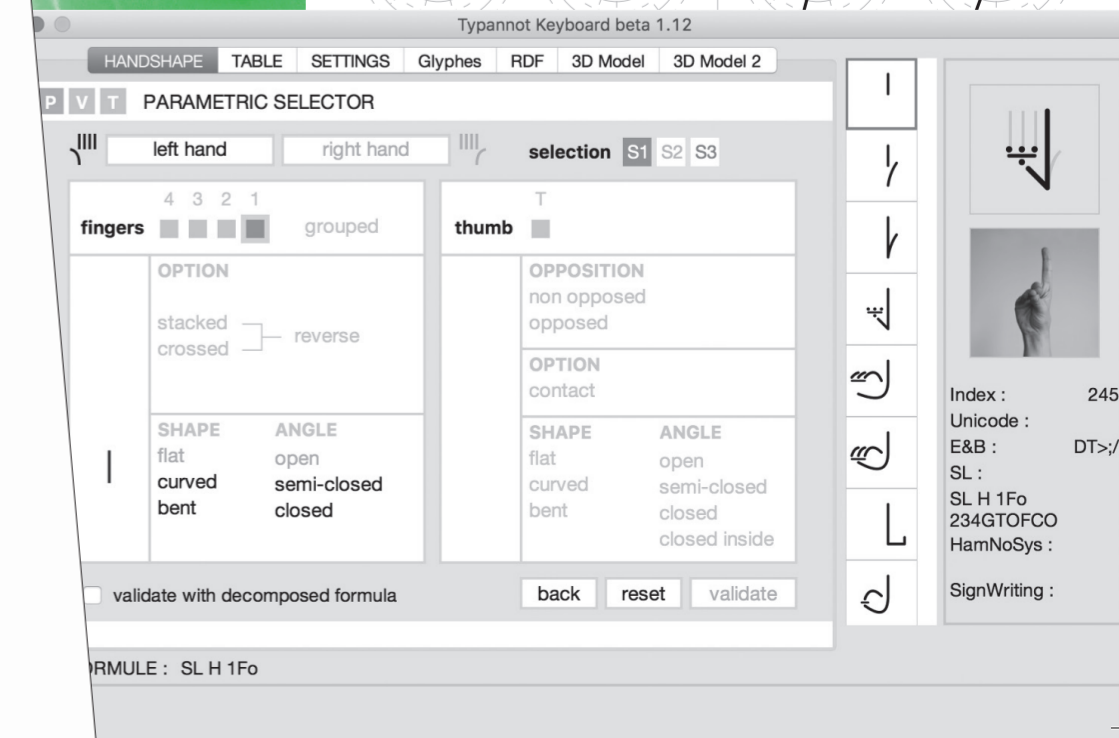


### Systèmes graphématiques et écritures des langues signées

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- Université de Rouen, laboratoire EA Dysola
- Patrick DOAN
- Université de Technologie de Compiègne, laboratoire Costech
- Claire DANET
- Université de Technologie de Compiègne, laboratoire Costech
- Claudia Savina BIANCHINI
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- Timothée GOGUELY
- ÉSAD d'Amiens, De-sign-e Lab
- Adrien CONTESSE
- ÉSAD d'Amiens, De-sign-e Lab
- Morgane REBULARD
- ÉSAD d'Amiens, De-sign-e Lab

Résumé  
Depuis quelques décennies, les langues des signes (LS) connaissent des tentatives d'écritures à travers l'invention de systèmes de notation. La présentation de trois d'entre eux permet d'expliquer les choix qui ont été faits notamment sous l'influence des écritures des langues vocales essentiellement caractérisées par la rupture de modalité sémiologique et sensorielle entre l'écrit et l'oral. La collision de ces deux modalités conduit à une réécriture radicalement différente de l'écrit LS devenu scripteur alors que les modalités articulaires (le membre

## work in progress



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## **Friday 21 October**

**9.30 Elena Albertoni  
Stroke by stroke**

To trace by hand the single strokes that make up letterforms offers a valuable insight into the creation process of a type designer. Starting from there with the help of examples ranging from sign painting to digital type design (my main fields of work), the talk will focus on the potential of those strokes for the purpose of conceiving original visual identities. The study of the different approaches (digital and analogue) to build specifically sans serif letters is aimed to show the importance of choosing the right letterforms for a specific application and environment, independently from the technology used to create and render them.

**10.30 Éloïsa Pérez  
Learning forms of writing:  
Using typography to help kids  
learn to write**

Writing is foremost a mode of expression. Its acquisition implies the learning of graphical systems, and of the syntactical and semantic logics that govern the language it aims to represent. In that sense, its teaching involves two important challenges, since it relies both on the building of a theoretical understanding as well as on the production of graphic forms. This contribution is based on an ongoing PhD research, Learning forms, from Atelier National

de Recherche Typographique (ANRT) and CELSA (Paris-Sorbonne University), carried out in collaboration with French public schools.

It has to be seen under the angle of graphic design and typography and handles their influence in the learning to write process. Through a practical and a theoretical approach, Learning forms experiments with the educational potential of materiality. It is focused on the design of a typographic material, Les Prélettres, which introduce very young children to writing.

**11.30 Cestual Script\*  
Typannot: a glyphic system for  
the transcription of handshapes**

In the context of Sign Language (SL) study, three distinct functions can define a writing system: the abilities to read, write and search. None of the existing systems (SignWriting; HamNoSys) offers a good compromise. In this work, we present the construction of a graphematic system able to cover all SL handshapes existing in the world, consisting of features based on a phonological description. This multidisciplinary project, summoning type designers and linguists, aims at producing a readable and stable, unambiguous and fully searchable glyphic system that provides a relevant solution to the transcription of SL and the development of an accompanying writing system.

Lunch break