

TYPANNOT

A typographic system to
transcribe sign languages

Collaborateurs :

Claire Danet

Patrick Doan

Claudia S. Bianchini

Dominique Boutet

Adrien Contesse

Jean-François Dauphin

Morgane Rébulard

Mathieu Réguer



gestual
script

ésad _ AMIENS



SIGN LANGUAGES



GESTURAL LANGUAGES



Handshape



Position



Mouvement



Mouth action

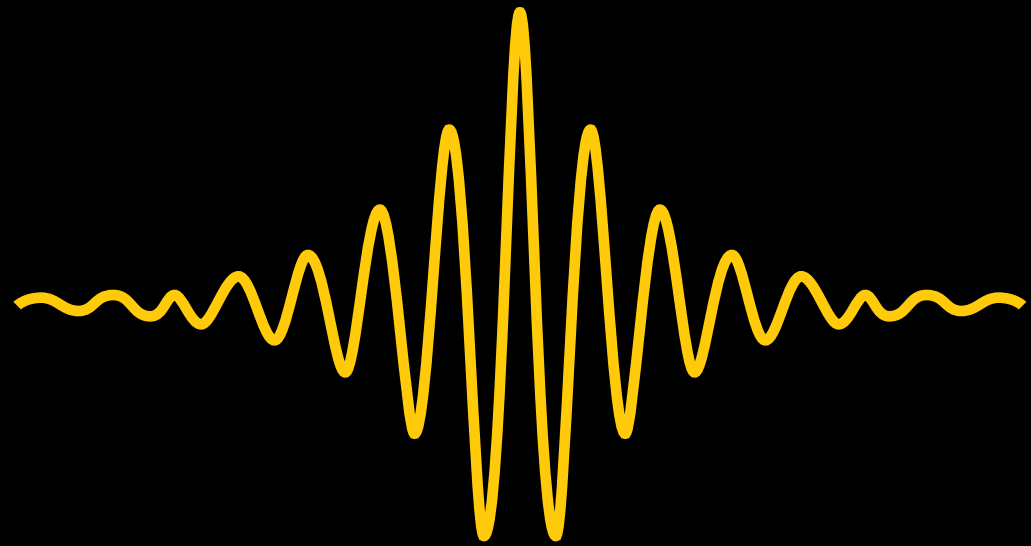
REPRESENTING SL



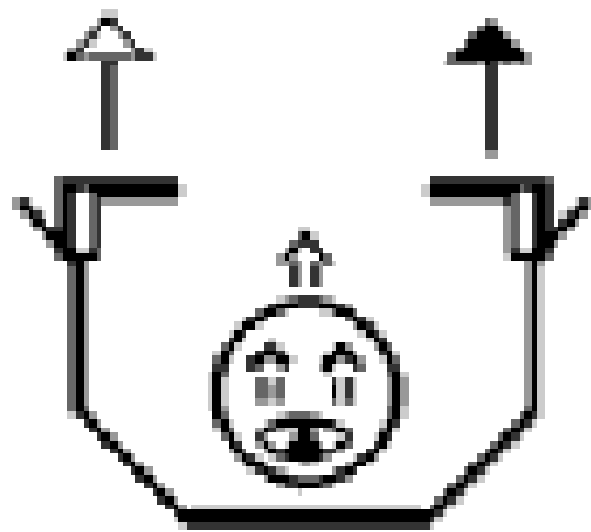
POURQUOI NE PAS ÉCRIRE EN FRANÇAIS ET UTILISER L'ALPHABET?

A

=



LOGOGRAPHIC APPROACH COMPREHENSION



SignWriting
V. Sutton 1985

ELAN

Describing gesture to analyse its structure

The screenshot displays the ELAN software interface. At the top, there is a menu bar with options: File, Edit, Annotation, Tier, Type, Search, View, Options, Window, Help. Below the menu bar is a video player showing two men sitting on chairs against a blue background. The right side of the interface features a table with columns: Nr, Annotation, Begin Time, End Time, and Duration. The table lists 11 annotations, with the 4th annotation, 'PT:loc', highlighted. Below the table is a control panel with buttons for navigation and playback. At the bottom, there is a detailed annotation grid with multiple tiers. The tiers include: RH ID gloss, LH ID gloss, Dependent variable, 1-handed/2-handed, Grammatical function, HS preceding target, HS following target, Genre of text which, Summary, and Social. Each tier contains various alphanumeric codes and numbers, such as 'HO PT lo G', 'PE N IRELA SA PEOP', 'c', 'X', 'c', '5', '1', 'd', 'a', 'o', '5', 'p', '5', 'p', '1', 'c', 'c', 'c1do', 'X1', 'c2', '51', '5', '51'.

Nr	Annotation	Begin Time	End Time	Duration
1	SAME	00:00:15.140	00:00:15.330	00:00:00.190
2	SCOTLAND	00:00:15.330	00:00:15.630	00:00:00.300
3	HOLD-FLAG	00:00:17.040	00:00:17.270	00:00:00.230
4	PT:loc	00:00:17.270	00:00:17.590	00:00:00.320
5	G	00:00:17.590	00:00:17.890	00:00:00.300
6	PEOPLE-LOOK	00:00:19.380	00:00:19.640	00:00:00.260
7	NORTH	00:00:19.650	00:00:19.860	00:00:00.210
8	IRELAND	00:00:19.870	00:00:20.310	00:00:00.440
9	SAME	00:00:20.320	00:00:20.550	00:00:00.230
10	PEOPLE-LOOK	00:00:20.550	00:00:20.930	00:00:00.380
11	PT:pro1	00:00:24.420	00:00:24.610	00:00:00.190

CURRENT LIMITATIONS



High level representation/low level of decomposition
limiting searchability in parameters components

Representation is based on what is visible
(handshapes, position, trajectory)
surface effects of body parts transformation

Transcription is focusing on handshape
biased perspective diminishes role of limbs

Unable to be both analytical and readable
limiting communication levels

TYPANNOT

A typographic system for transcribing SL at a deep phonological level.

- **For who ?**
Researchers in SL
- **Why ?**
addressing limitations of current systems
thus promoting new types of analysis
- **How ?**
 - using an articulatory approach
 - associating linguistic, typographic and programming expertise

PROCESS

1. linguistic
structuration
of a parameter

2. annotators
test the graphematic
formula

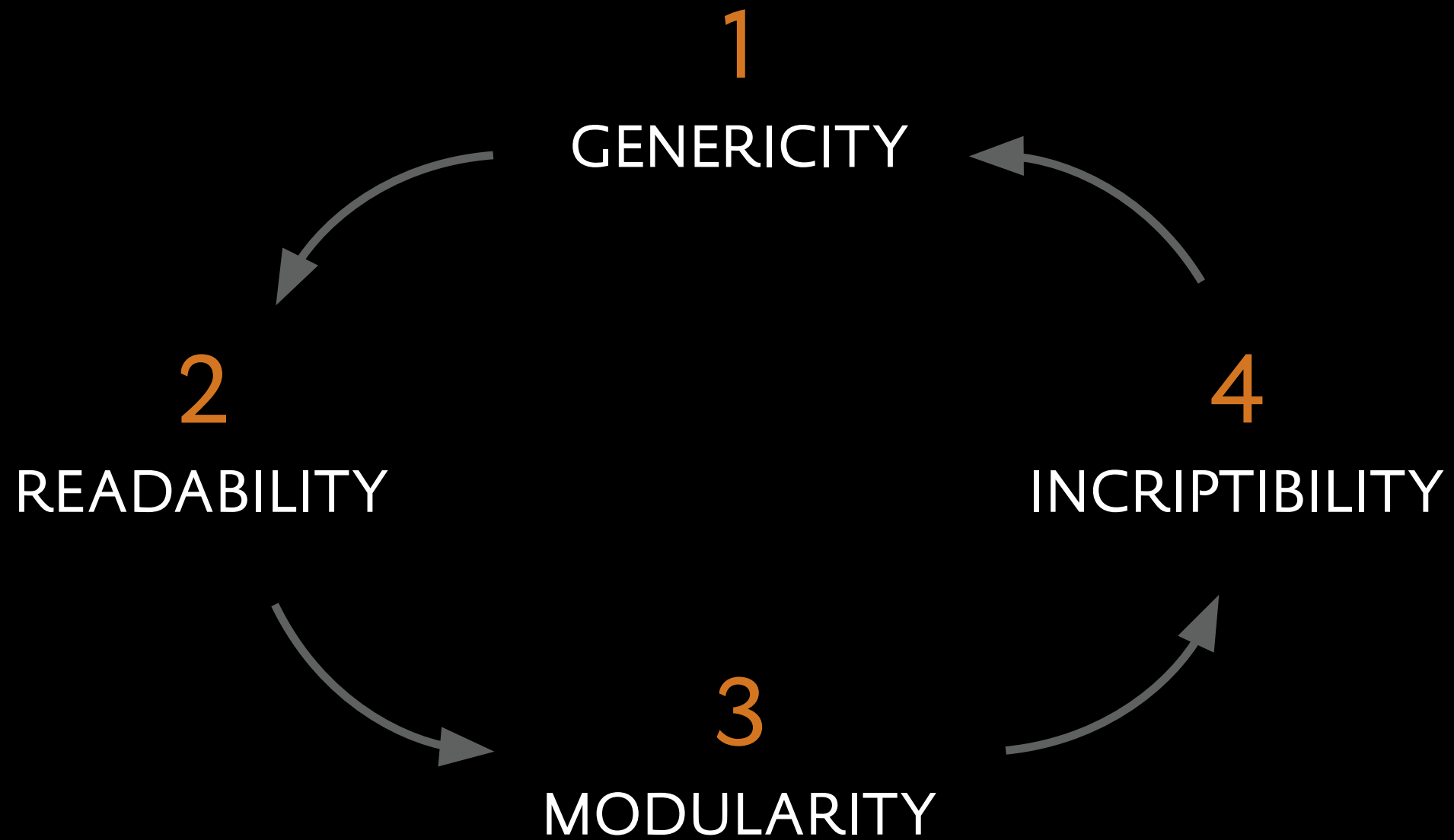
3. designing characters
adressing low level
representation

4. developing
a consistant syntax

6. developing
input interface and
implementing font

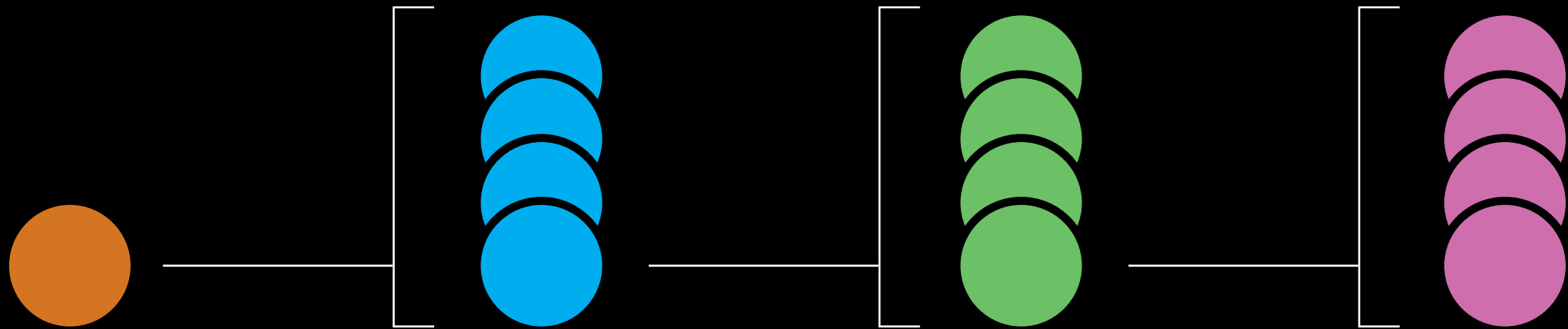
5. designing glyphs
adressing high level
representation

METHODOLOGY



deep articulatory representation

BRAKING DOWN INFORMATION



1. PARAMETER

handshape
upper limbs position
mouth actions
movement

2. PARTS

fingers
thumb
arm
forearm
lips
...

3. VARIABLES

form
angle
rotation
vergence
events
...

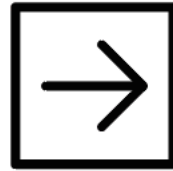
4. VALUES

flat, curved, bent
open, semi-closed, closed
degrees
contact
...

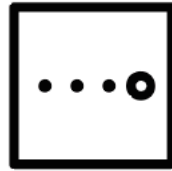
Bricks of information



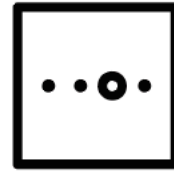
L
left



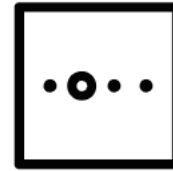
R
right



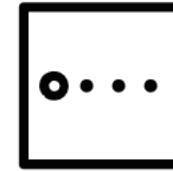
1
index



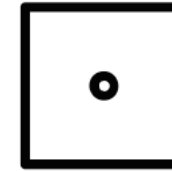
2
middle



3
ring



4
pinky



T
thumb



F
flat



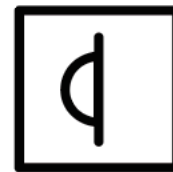
C
curved



B
bent



fo
full
open



o
open



sc
semi
closed



c
closed



G
grouped



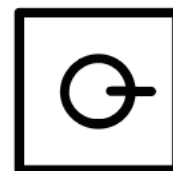
X
crossed



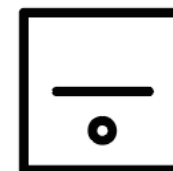
K
stacked



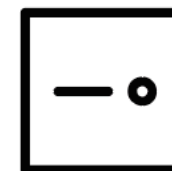
Re
reverse



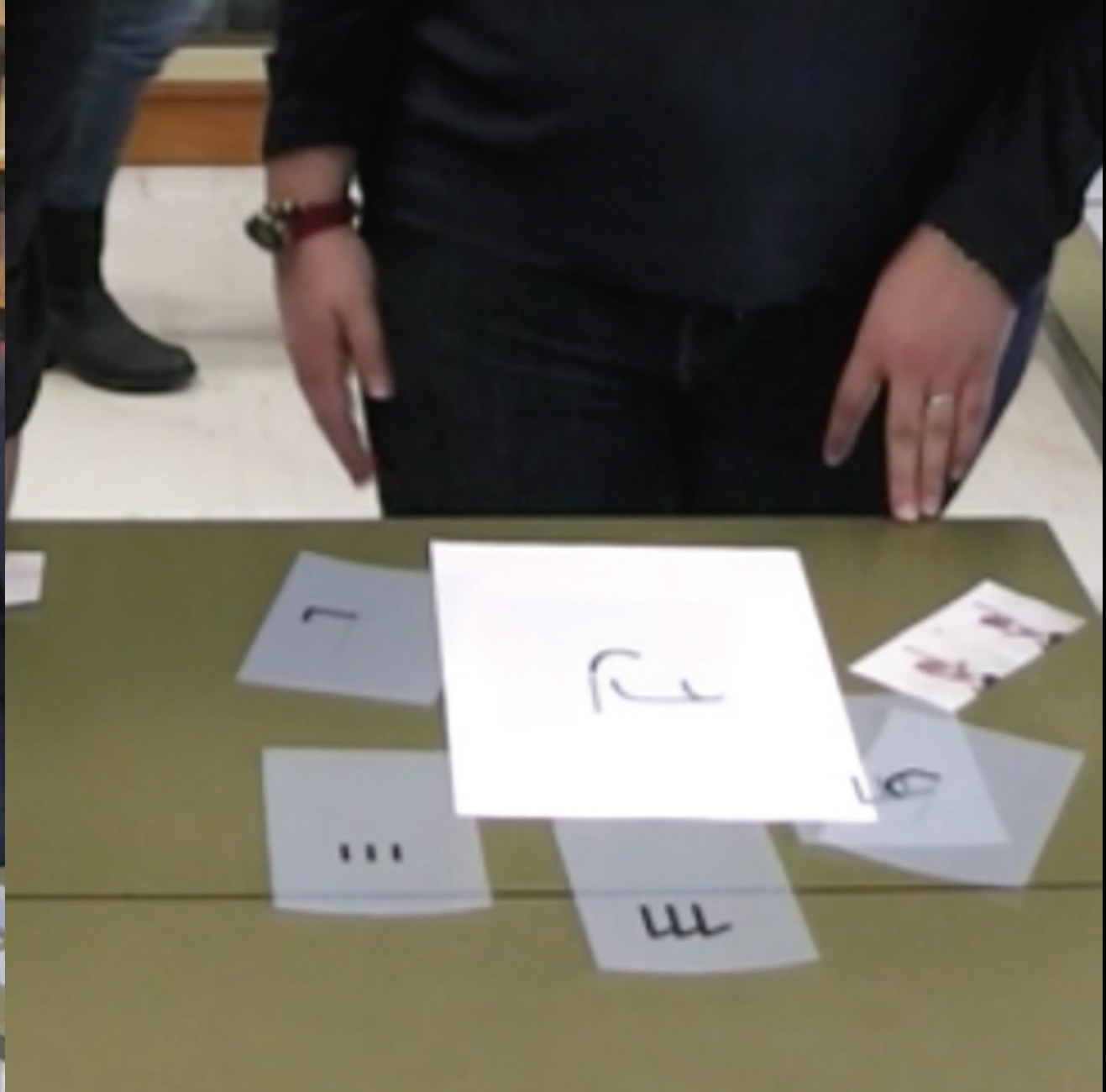
CO
contact



OP
opposed



NOP
non
opposed

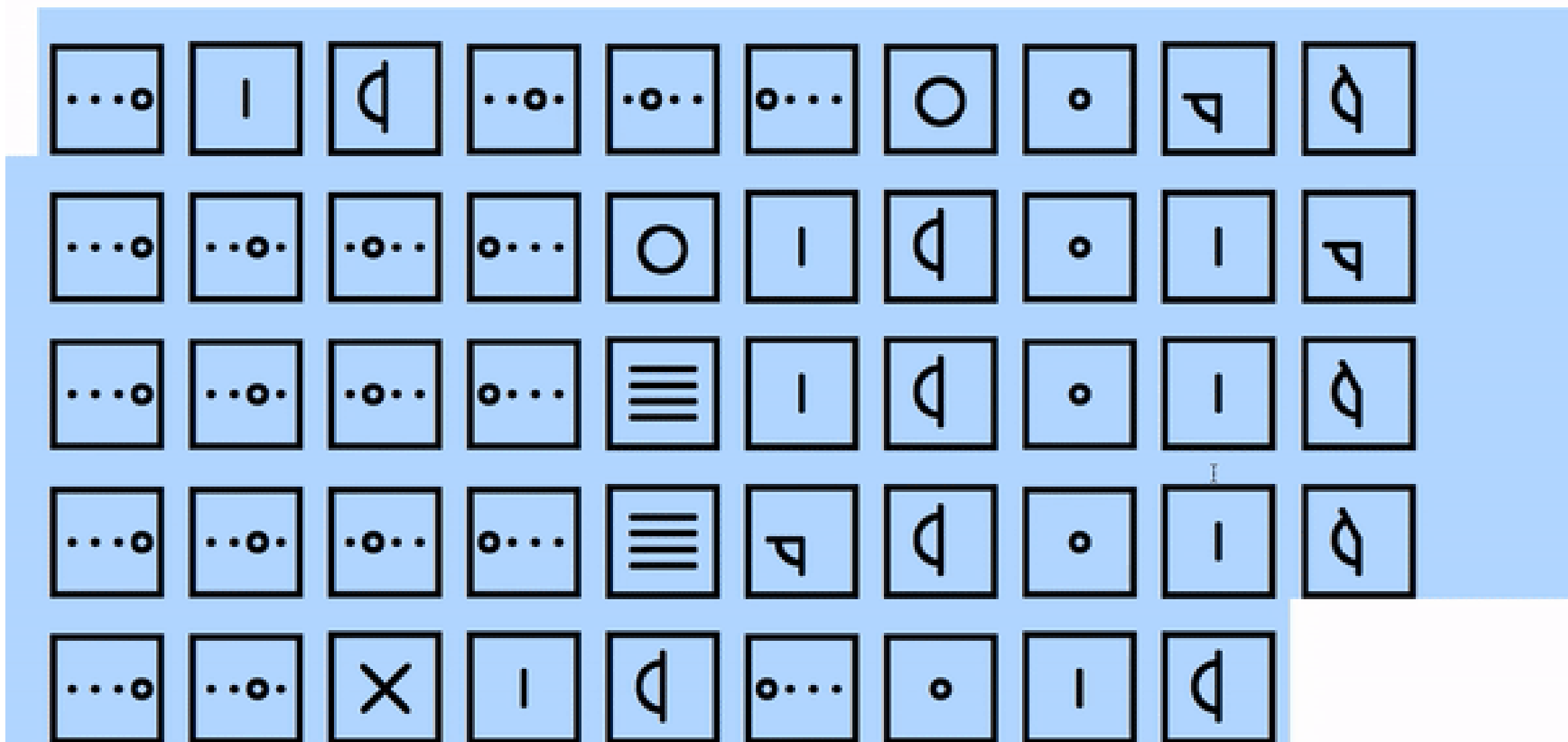




Typannot Handshape Regular v 0.1

Test des features OpenType pour les handicapes composées

10 mars 2017

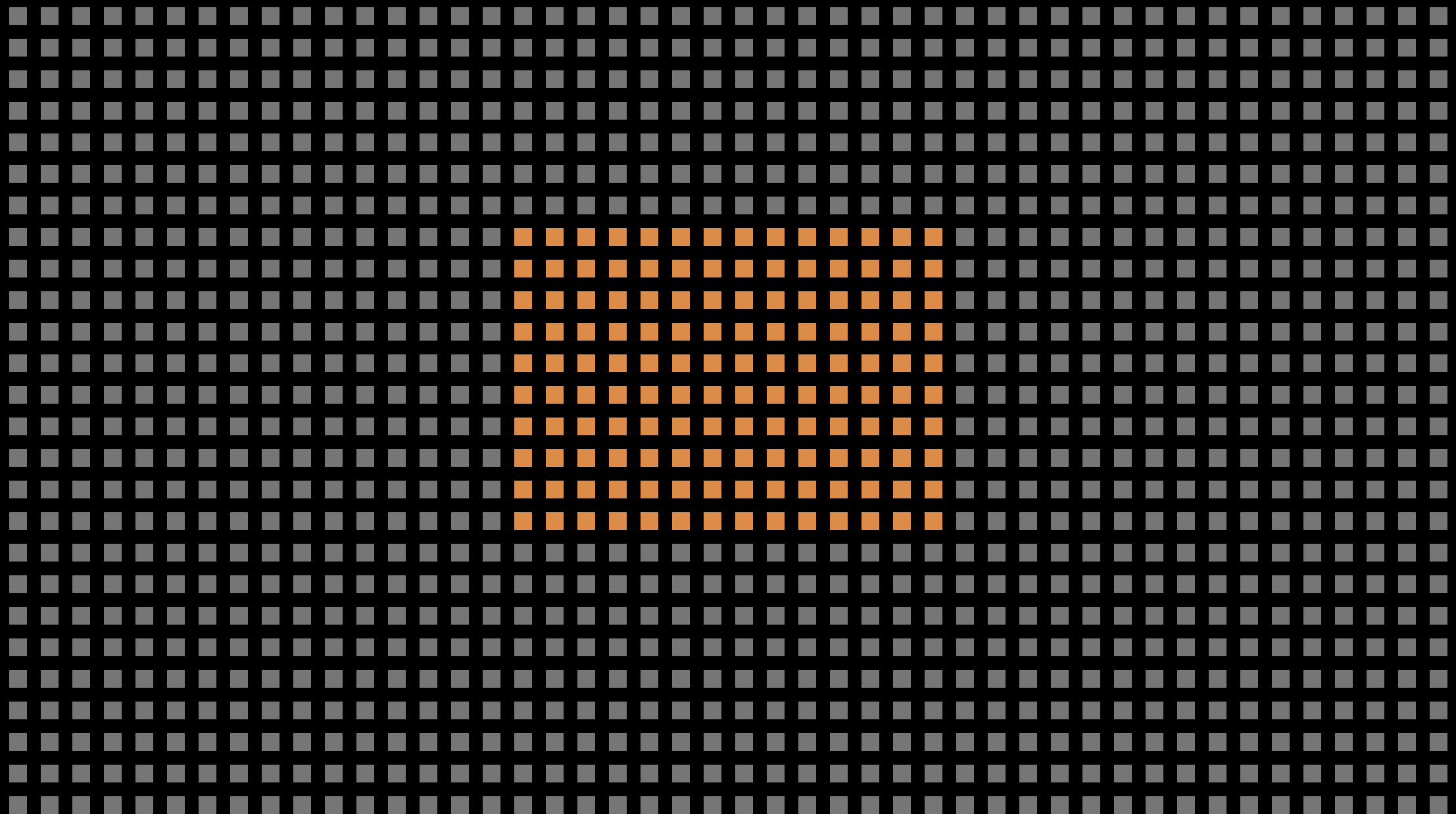


GLYPH REPERTOIRE

291 600	possible combinations
65 000	glyphs limitation (opentype format)
	selection based on which criteria?
37 500	basic repertoire
27 500	available glyphs

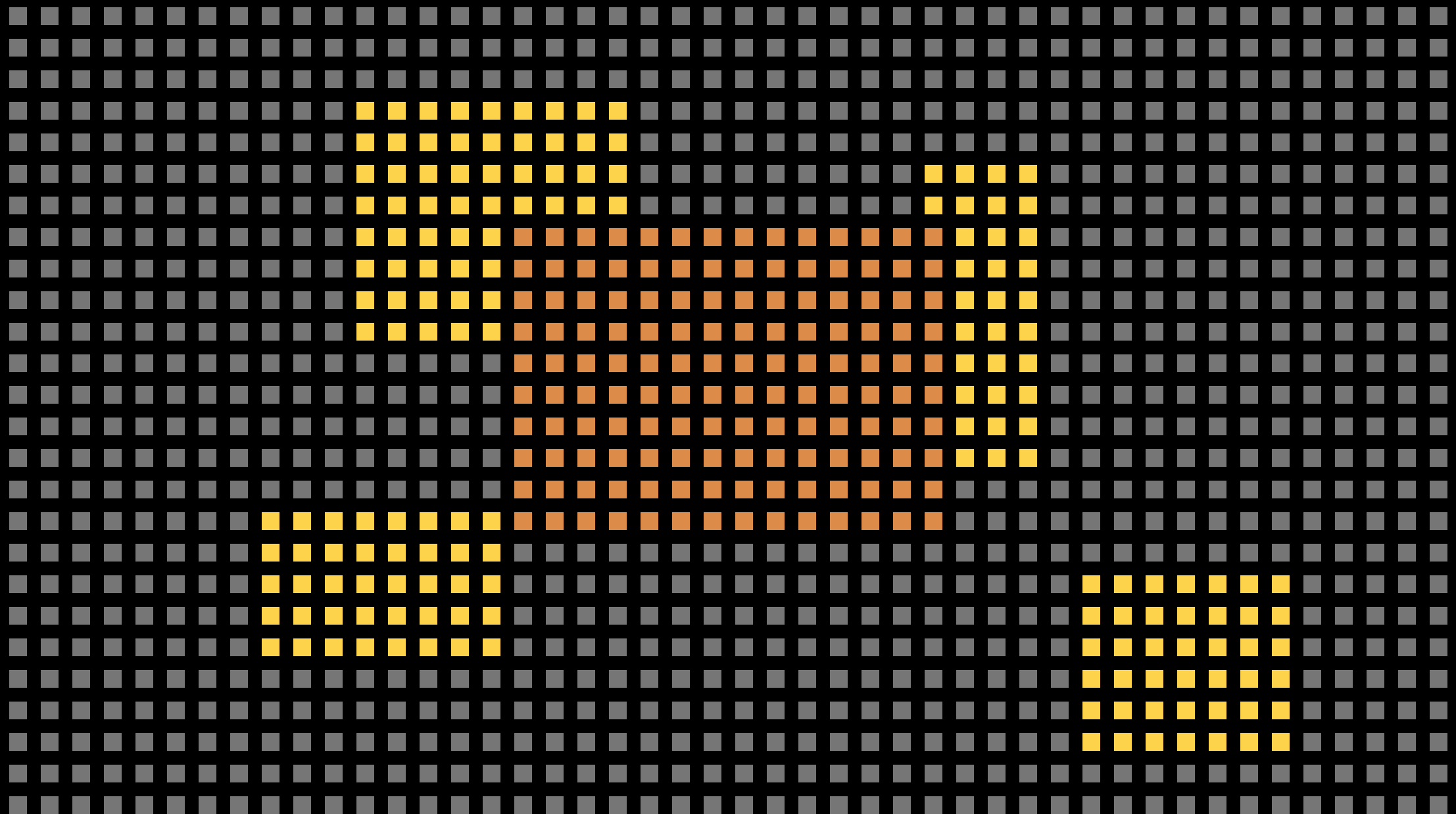
Modularity

Generating a repertoire

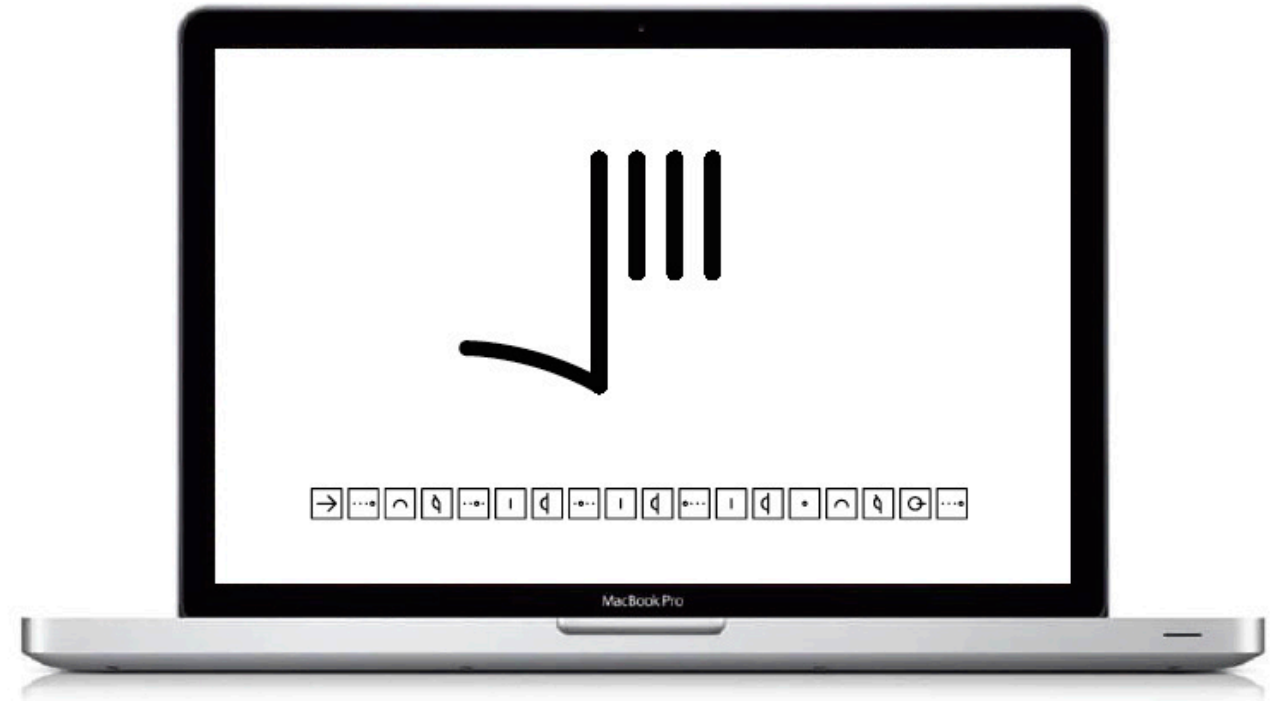


Modularity

Top down approach



GESTURAL INPUT



UPPER LIMBS REPRESENTATION



1. — Obéissant.



2. — Désobéissant.



3. — Studieux.

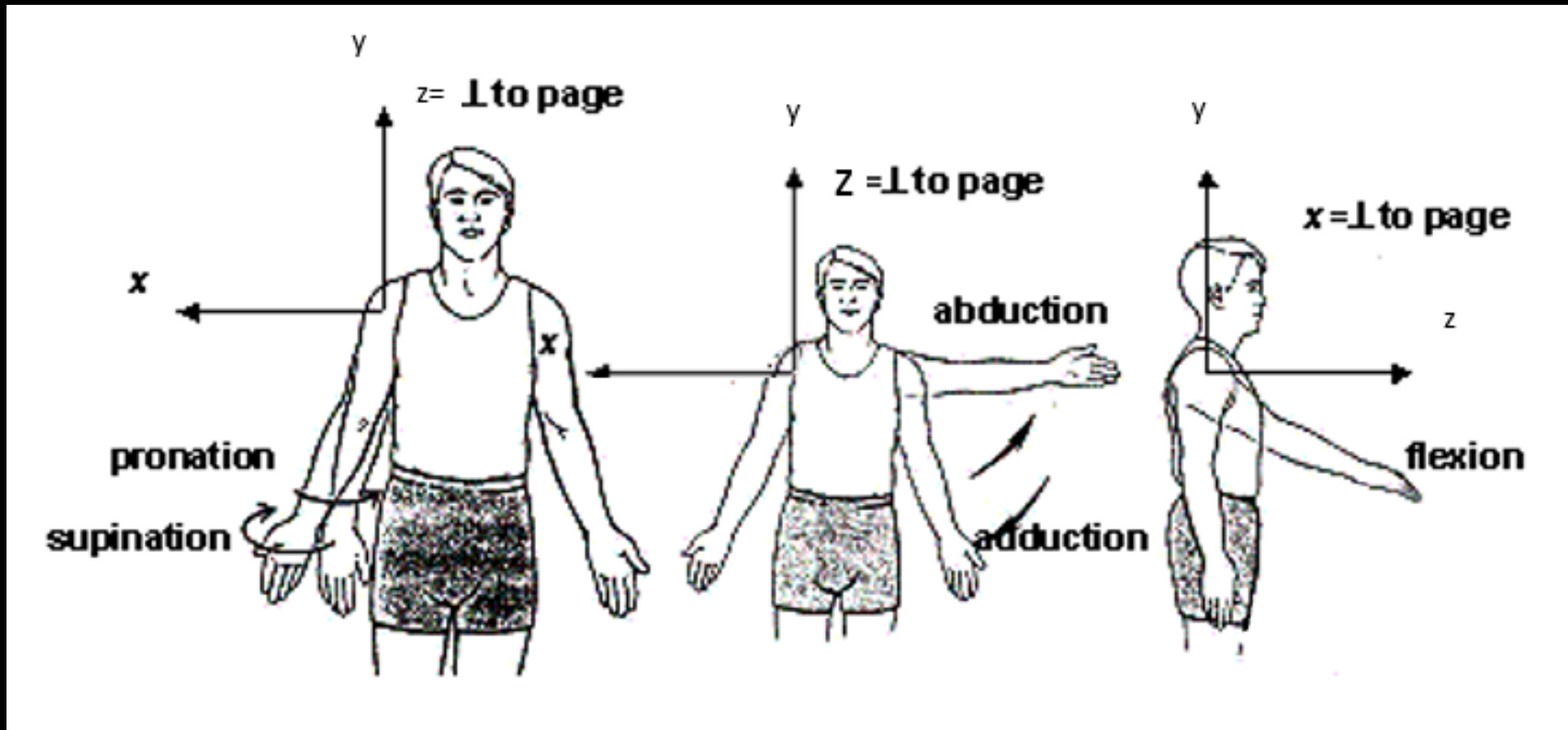


4. — Paresseux.

Dessins de signes LSF

Pierre Pélissier 1856

3 PARTS 7 VARIABLES



ARM

flexion-extension
adduction-abduction

FOREARM

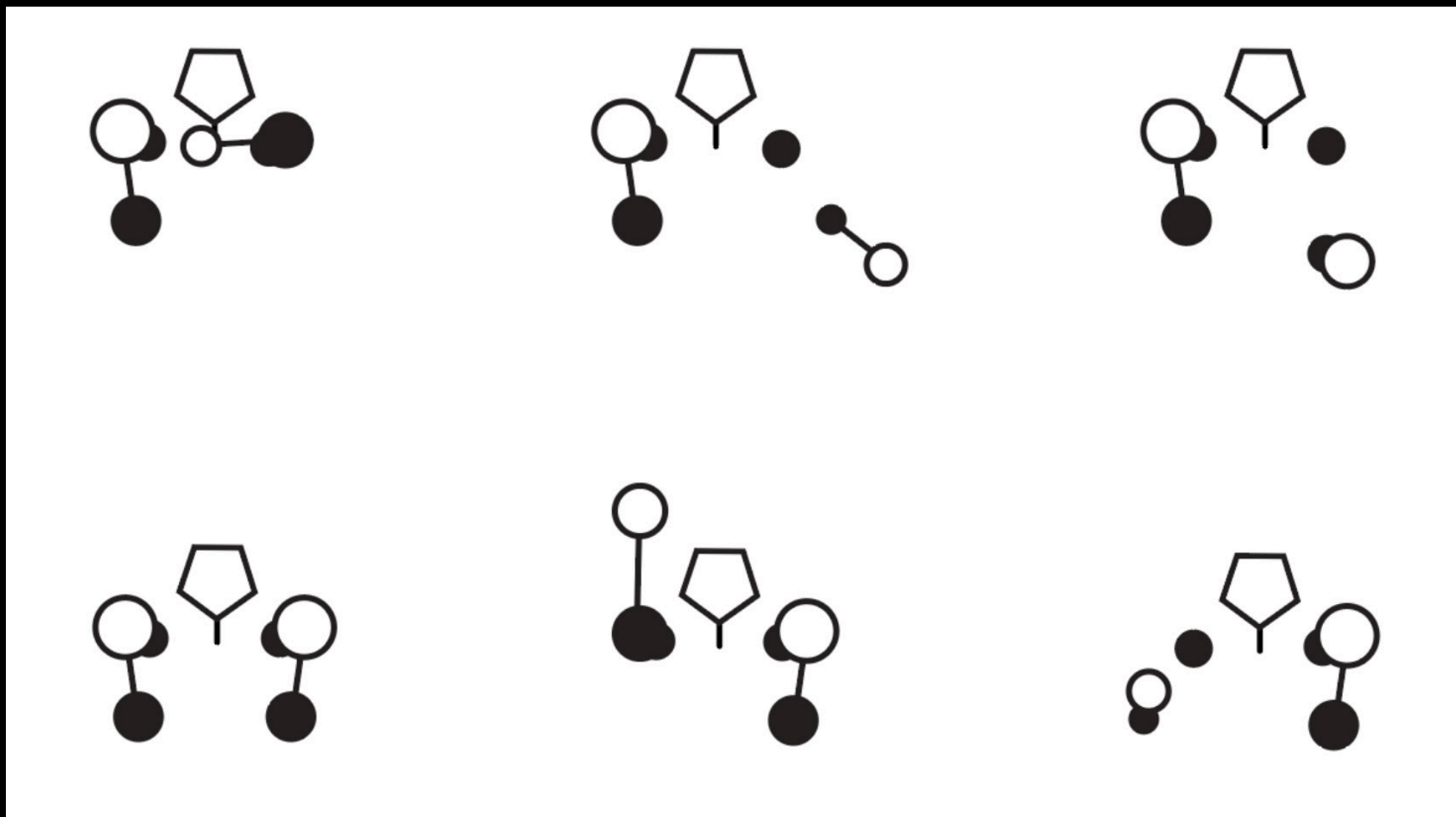
flexion-extension
rotation

HAND

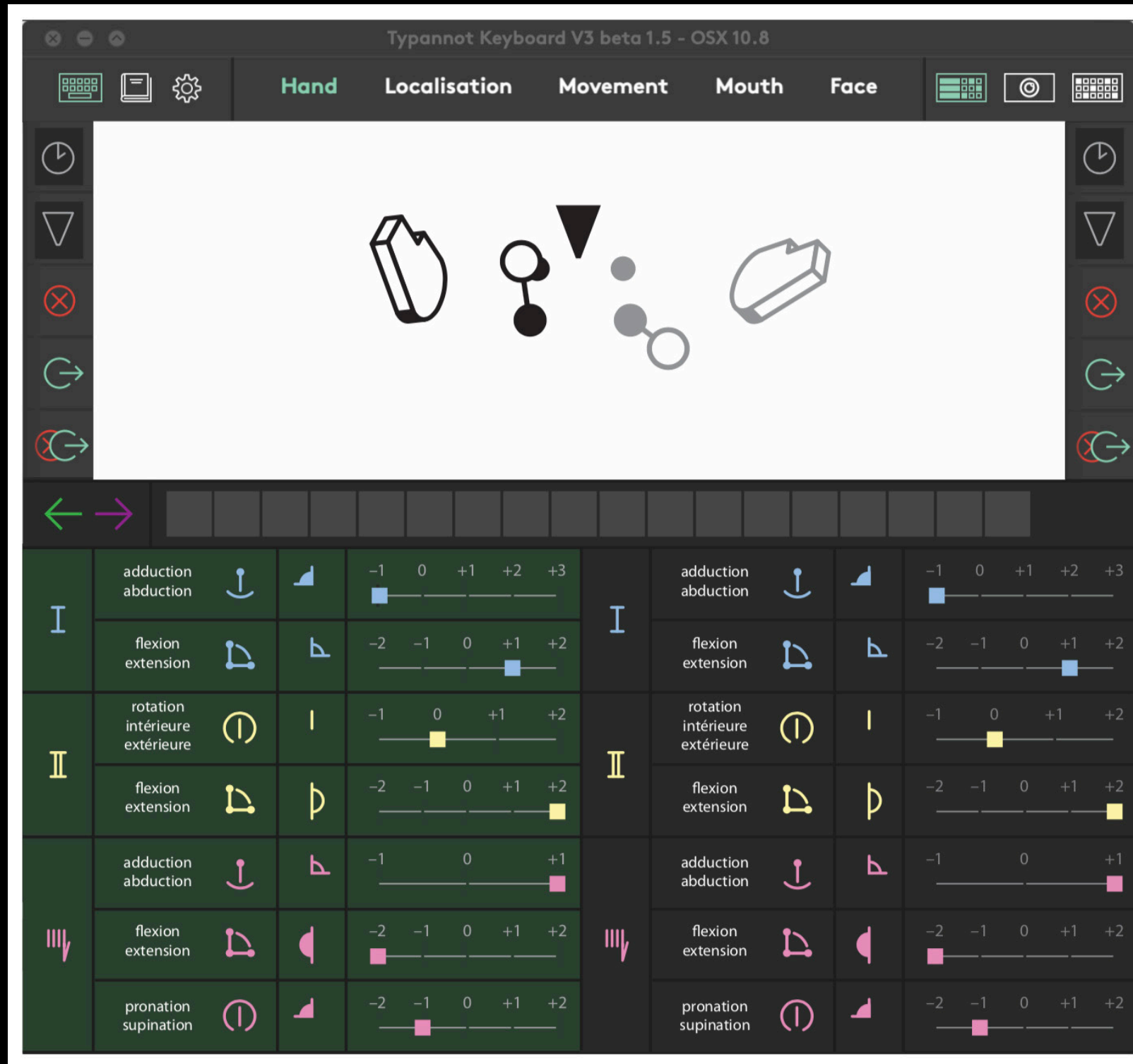
flexion-extension
adduction-abduction
pronation-supination

REPRESENTING THIRD DIMENSION

typographically!



PARAMETRIC INPUT INTERFACE



FURTHER

Releasing a first version

- handshape
- upper limb configuration

Unicode registration

Two more parameters

- mouth actions
- movement

MERCI

Collaborateurs :

Claire Danet

Patrick Doan

Claudia S. Bianchini

Dominique Boutet

Adrien Contesse

Jean-François Dauphin

Morgane Rébulard

Mathieu Réguer



gestual
script

ésad _ AMIENS

