

Fingers' Dance:
une grammaire du geste pour la navigation
et l'annotation de films de danse.

Fingers' Dance:
gestural grammar for navigation and
annotation in dance films

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Fingers' Dance: a tool based on multitouch technology -MicrosoftSurface

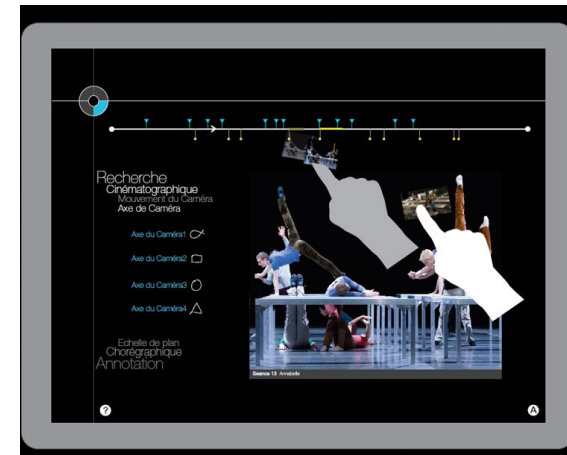
Purpose : To navigate in video content and to annotate it by gesture



1. Workspace



2. Gestural annotation



3. Navigation :
control of the Time Line

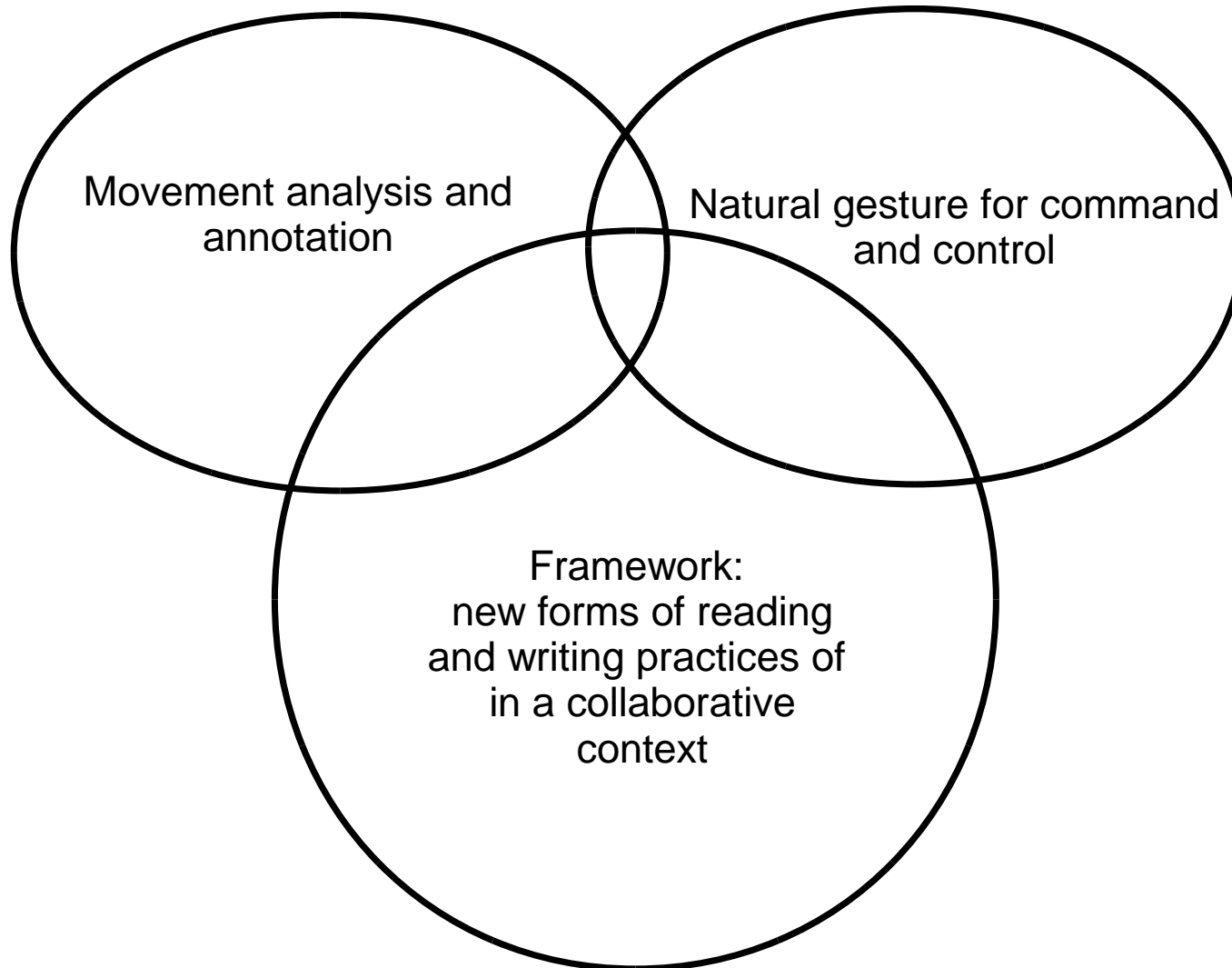


4. Collaborative work



5. Tangible objects : sound control

Fingers' Dance



Movement analysis and annotation

annotated audiovisual document associates
the annotation
(text, data, sound, image – which are largely explored,
... **gesture – which is not**)
to a spatio-temporal fragment of the document

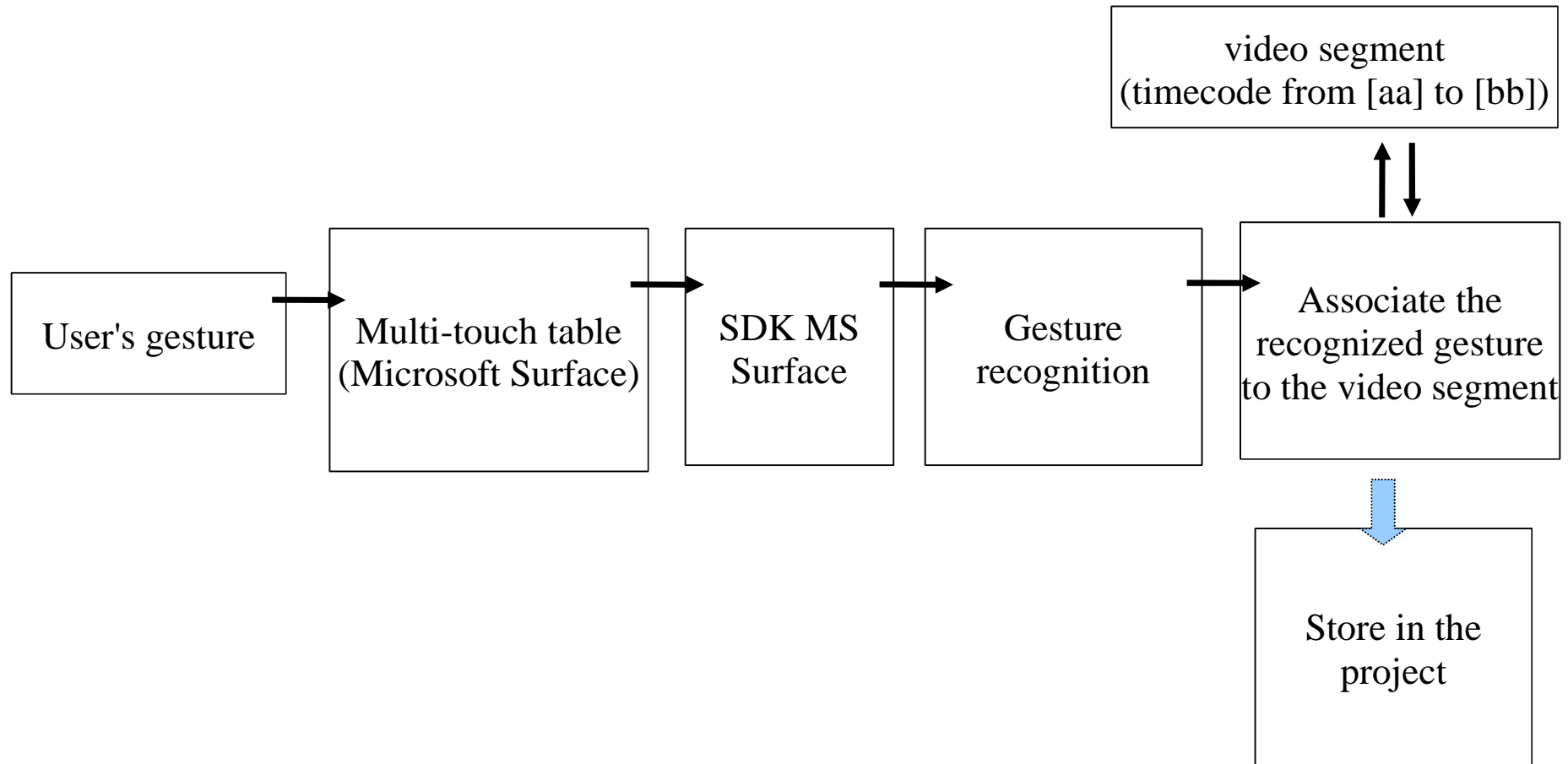
Approach:

NOT : Automatic segmentation for annotation and analysis (for movement analysis)

NOT: Manual segmentation and fine textual annotation of filmed gestures (for language analysis)

→ manual segmentation and gestural annotation

Gestural annotation and gestural command



New critical instruments for temporal content

Temporal content is characterized at least by:

- a certain passive attitude of the viewer to the audiovisual content
- a movement of the filmed object *and* a movement of the camera

Our central hypothesis:

sensorimotor (gesture) interface,

by means of the body's dynamics the user is involved in,

provide possibilities to overcome passive attitude to the audiovisual content

and to develop new instruments of active perception and active reading

For ex.: User's gesture acting as memory for an audiovisual stream.

That means:

➤ to propose grammars for the user's gesture



✓ Such initiatives exist

➤ such grammars should explore the articulation between

• on one side, the filmed movement and the camera movement



✗ But not yet *specifically*
for the temporal content

• on the other side, the user's gesture

Gestural grammar

Context: dance film "One flat thing, reproduced"

Director : Thierry de Mey

Choreographer : William Forsythe

confronting cinematographic language (different types of shots and framing)
to the contemporary choreographic expressions (solos, groups, hitting, sliding gestures, etc.)

Issue: articulation between two grammars

- cinematographic

- chorégraphique

Both of these grammars are "translated" into gesture on multi-touch table

Grammaires gestuelles



Thierry de Mey

Grammaire cinématographique

§ mouvement de camera :

- o panoramique  (glissement de la tranche de la main)
- o plan fixe ● (un doigt)
- o travelling —

§ axe de camera :

- o frontal ● (un blop)
- o plongée 
- o contre plongée 

§ échelle de plan :

- o d'ensemble a moyen 
- o de rapproche a demi-ensemble 
- o plan américain 
- o plan d'ensemble 
- o plan de demi-ensemble 
- o plan moyen, 
- o gros plan (plan isolant un détail du corps), 
- o tres gros plan (cadrage d'un détail du visage)
- o plan rapproché (plan cadrant un personnage au niveau des épaules ou de la poitrine)

Grammaire chorégraphique

Personnages :

- § Trigger —●
- § Jeux de contre points ●●
- § Glissades ~
- § Choutes contre la pesanteur ^
- § Choutes avec la pesanteur v
- § Alignements =
- § Contact visuel ><
- § Mouvement contraintes <>
- § U-ing & O-wing (détourage) △



Objets (les tables) :

§ Les variations des tables :









- o Une |
- o Deux ||
- o Trois |||
- o Toutes ||||

Les alignements des tables

§ Le changement des niveaux des personnages par rapport aux tables :

- o Sous la table 
- o Sur la table 

(!) Simplification was necessary

1, 2, 3 dancers	1,2,3 down	
All dancers	4 downs	
trigger	Right tap	
CONTRE PESANTEUR	up right - down right (flèche haut)	
AVEC PESANTEUR	down right - up right (flèche bas)	
ALIGNEMENT	right right (en même temps, 2 traits horizontaux et parallèles)	
CONTACT VISUEL	down right - down left (flèche droite simple, ce n'est plus la double flèche centripète)	
MOUVEMENT CONTRAINTE	down right - down left (flèche gauche)	

CONTACT TABLE- DANSEUR	2 tap	• •
Mouvement Image Avant (zoom ou travelling)	tap up	!
Mouvement Image Arrière (zoom ou travelling)	tap down	i
Travelling haut	5 fingers up (les 5 doigts de la main)	
Travelling bas	5 down	
Travelling gauche	5 left	
Travelling droite	5 right	

Gestural grammar as implemented (this page and the previous one)

Principle and Functionnalities

Annotate

Time Line

Segment

a segment can be annotated with gesture(s) describing this segment

Search

Producing a gesture will find all segments described by this gesture

Share

multiple users = multiple timelines : possibility to share gestural annotations
multiple films (to be done)

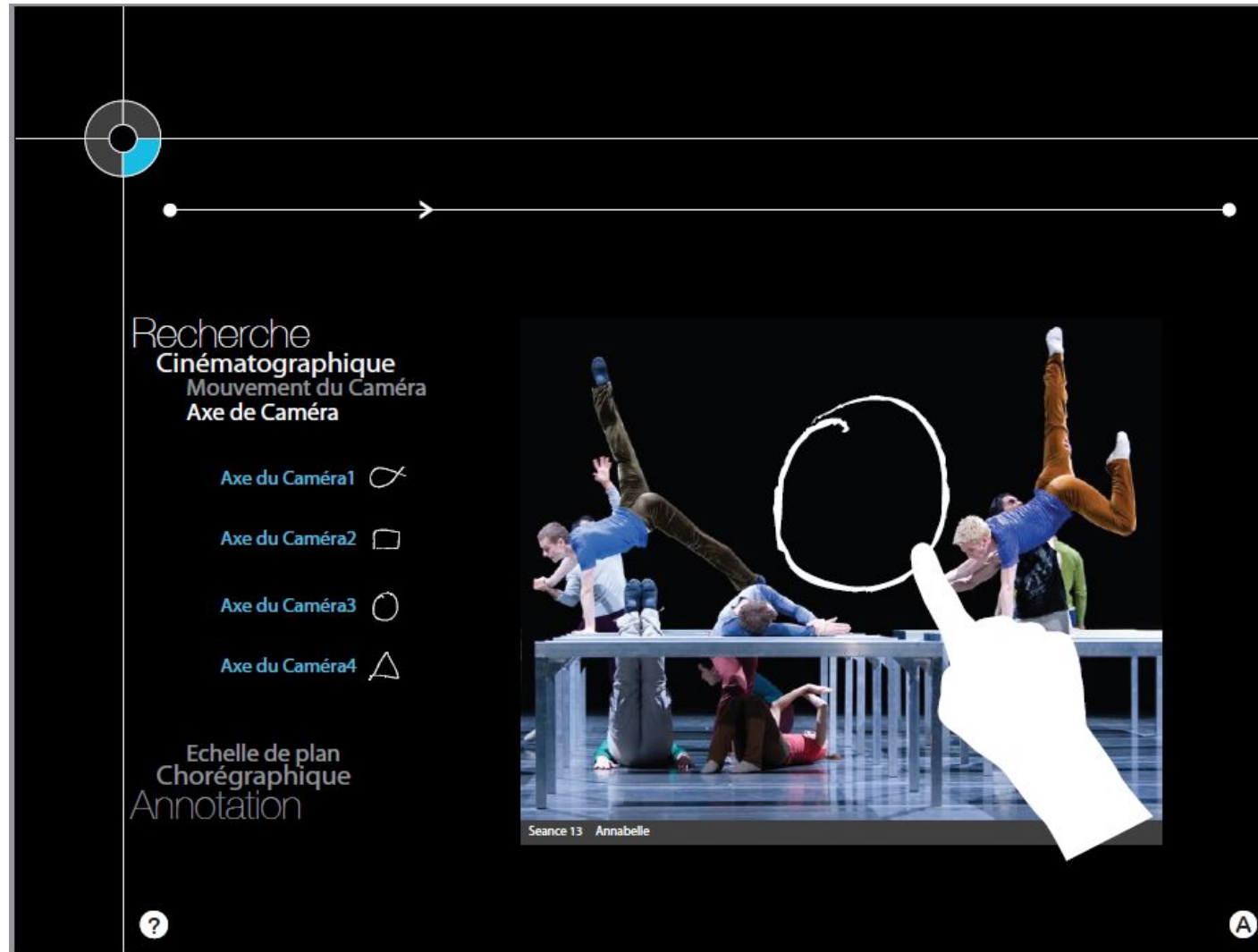
Fonctionnalités

Rechercher – Annoter - Partager

The screenshot displays a software interface for video annotation and research. At the top, a horizontal timeline is shown with a blue circular marker on the left and a white arrow pointing right, labeled with a 'Y' above it. Below the timeline, the interface is divided into two main sections. On the left, the text 'Annotation Cinématographique' is followed by 'Mouvement du Caméra' and 'Axe de Caméra'. Below this, four camera axes are listed with corresponding icons: 'Axe du Caméra1' with a circle and a diagonal line, 'Axe du Caméra2' with a square, 'Axe du Caméra3' with a circle, and 'Axe du Caméra4' with a triangle. At the bottom left of this section, the text 'Echelle de plan Chorégraphique Recherche' is visible. On the right, a video frame shows a group of dancers performing acrobatic moves on a stage. A large white hand icon with two yellow fingers is overlaid on the video. Below the video frame, the text 'Séance 13 Annabole' is displayed. In the bottom left corner of the interface, there is a question mark icon, and in the bottom right corner, there is a letter 'A' icon.


Fonctionnalités


Rechercher – Annoter - Partager





The screenshot shows a software interface with a black background. At the top left, there is a circular progress indicator with a blue segment. Below it, a horizontal timeline with a white arrow points to the right. On the left side, the text "Recherche Cinématographique" is displayed, followed by "Mouvement du Caméra" and "Axe de Caméra". Below this, four camera axes are listed with corresponding icons: "Axe du Caméra1" with a blue circle, "Axe du Caméra2" with a blue square, "Axe du Caméra3" with a blue circle, and "Axe du Caméra4" with a blue triangle. At the bottom left, the text "Echelle de plan Chorégraphique" and "Annotation" is visible. In the center, a video frame shows a group of dancers in a studio, with a white hand cursor pointing at a white circular annotation overlaid on the scene. At the bottom of the video frame, the text "Seance 13 Annabelle" is displayed. In the bottom left corner of the interface, there is a question mark icon, and in the bottom right corner, there is a letter 'A' icon.

Recherche
Cinématographique
Mouvement du Caméra
Axe de Caméra

Axe du Caméra1 



Axe du Caméra2 

Axe du Caméra3 

Axe du Caméra4 

Echelle de plan
Chorégraphique
Annotation

Seance 13 Annabelle

Fonctionnalités

Rechercher – Annoter - Partager



Recherche
Cinématographique
Mouvement du Caméra
Axe de Caméra

- Axe du Caméra1 
- Axe du Caméra2 
- Axe du Caméra3 
- Axe du Caméra4 

Echelle de plan
Chorégraphique
Annotation

Seance 13 Annabelle

Fonctionnalités

Rechercher – Annoter - Partager

The interface is divided into four quadrants, each displaying a video clip with annotations. A central navigation wheel with four colored segments (red, yellow, green, blue) is positioned in the center, with arrows pointing towards the four quadrants.

- Top-Left Quadrant:** Video of two dancers in a dark space. Annotations include "3 DAN", "1 DAN", and "AVEC F".
- Top-Right Quadrant:** Video of a dancer in a yellow outfit. Annotations include "TRAVELLING HAUT", "MVT IMAGE ARRIERE", "MVT IMAGE AVANT", "Cinématographique", and "Chorégraphique".
- Bottom-Left Quadrant:** Video of two dancers on a staircase. Annotations include "2 DAN" and "2 DAN". A sidebar on the left lists "Recherche" and "Chorégraphique" with sub-items "1 DANSEUR", "2 DANSEURS", and "3 DANSEURS".
- Bottom-Right Quadrant:** Video of a table with people around it. Annotations include "TRIGGER", "AVEC PESANTEUR", "CONTRE PESANTEUR", "ALIGNEMENT", "CONTACT VISUEL", "2 DAN", "1 DAN", "1 D", "CC", "AVEC F", and "AVEC PESANTEUR !".

Each video panel has a "Crédits" button in the top right corner. The interface also features a central horizontal timeline with arrows and a vertical slider in each quadrant.

Further work

Improve gesture recognition

Extend gestural grammar

« Collective » gesture: to explore the effects of the collaborative work on the annotation
for ex.: possibility to define new elements of gestural grammar by the user(s)