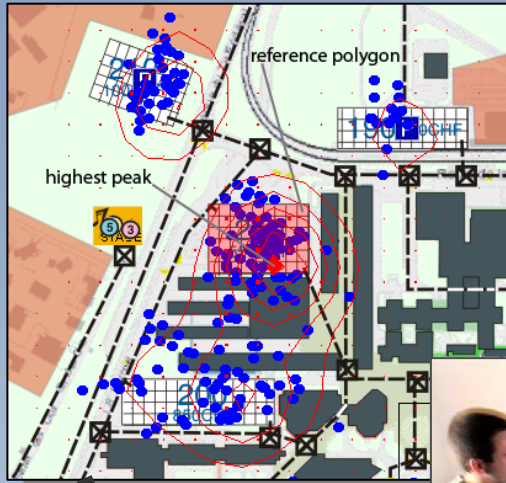


CRAFT : I & C : EPFL

Social signal

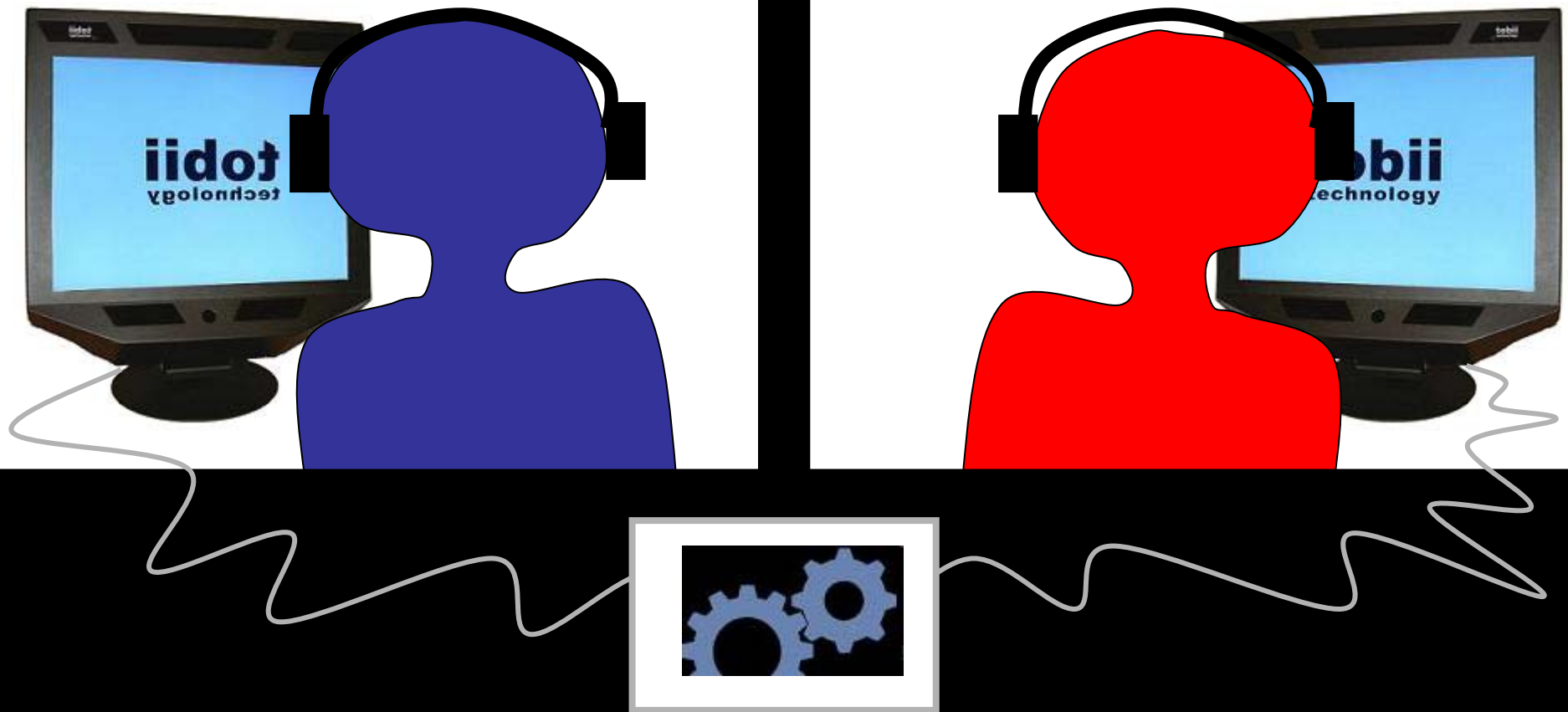


Augmented Social Interactions



Rolex Learning Center (EPFL), Architects: SAANA

Dual Eye Tracking



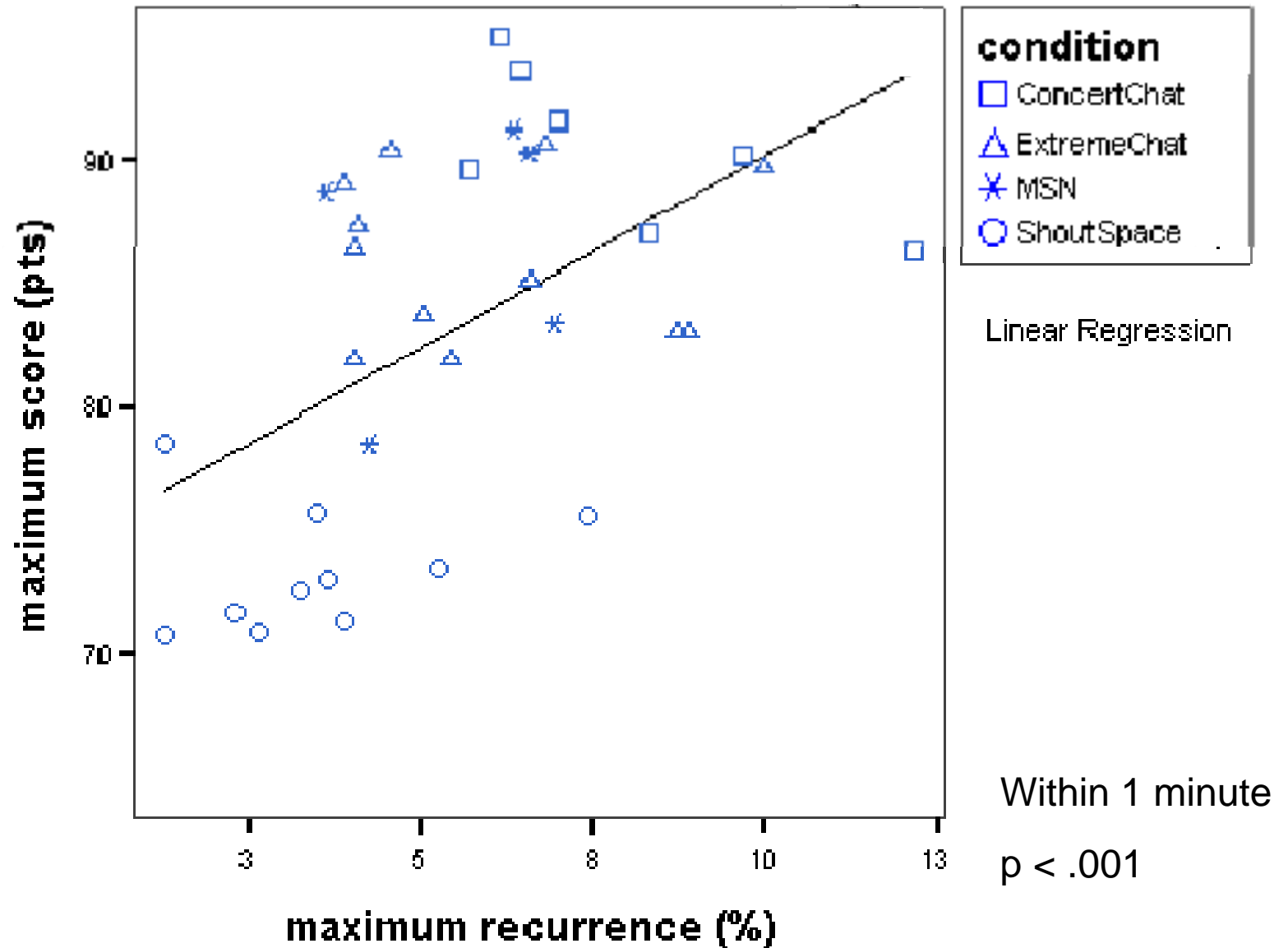
Problem solving task, 2 X 2 X 20 pairs, 1 hour, lab

The screenshot displays a complex network graph where nodes are represented by blue circles of varying sizes and are connected by a dense web of purple lines. This network is overlaid on a grayscale street map of an urban area. The interface includes a menu bar at the top left with 'Window', 'Options', and 'Help'. On the right side, there is a 'Nodes' panel listing several nodes with their respective coordinates and names, such as '1014, 1015, 1016, 1017, 1018, 1019, 1020'. At the bottom, a task instruction panel contains the following text:

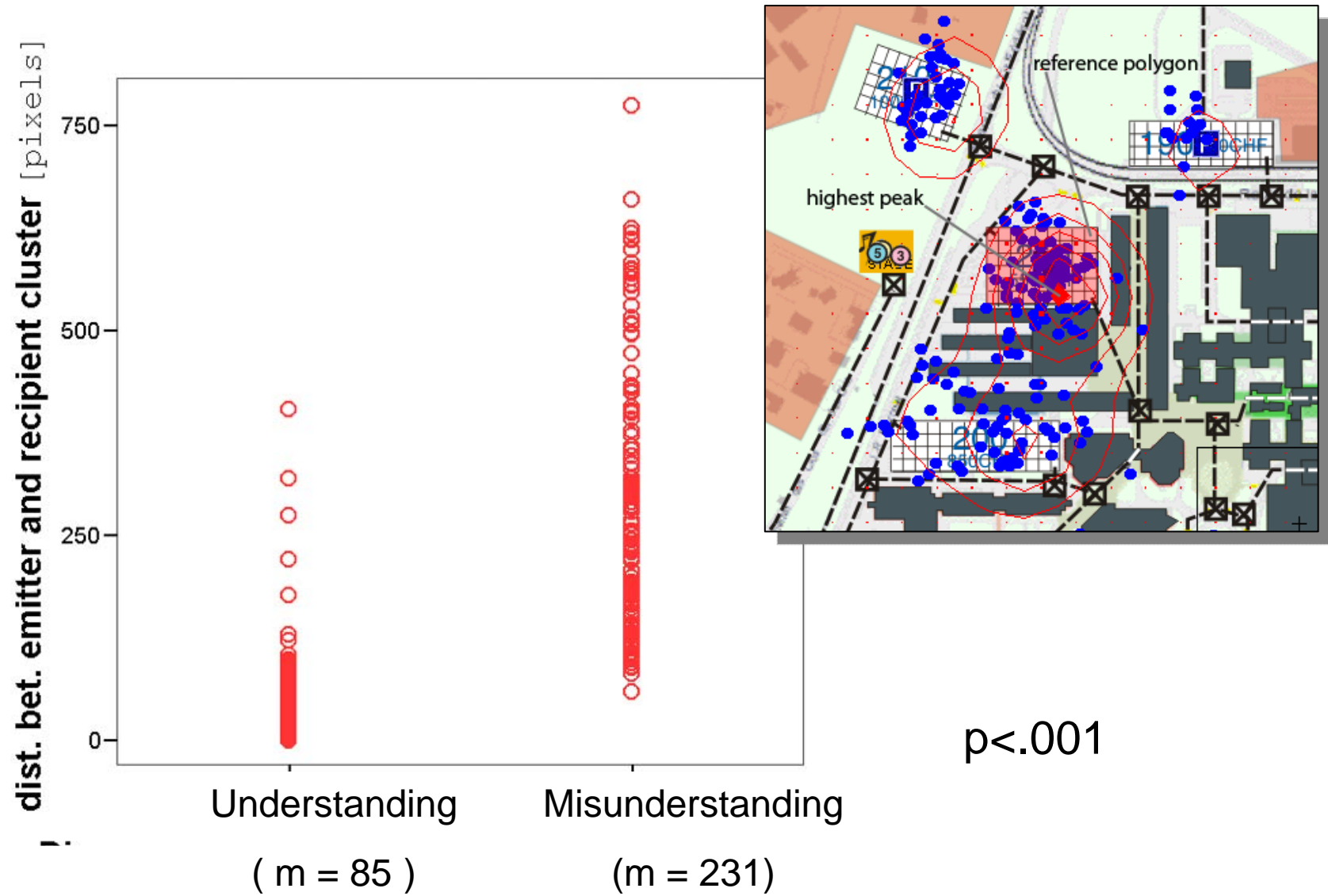
1. Minimiser la distance que les spectateurs doivent parcourir pour atteindre les scènes.
2. Maximiser la distance entre les scènes pour éviter les perturbations sonores.
3. Minimiser les coûts pour la formation des parkings pour 300 voitures.
4. Décider de l'ordre des concerts afin de réduire les temps morts entre chaque concert sur la même scène et de minimiser la distance que devront parcourir les spectateurs pour passer d'une scène à l'autre.

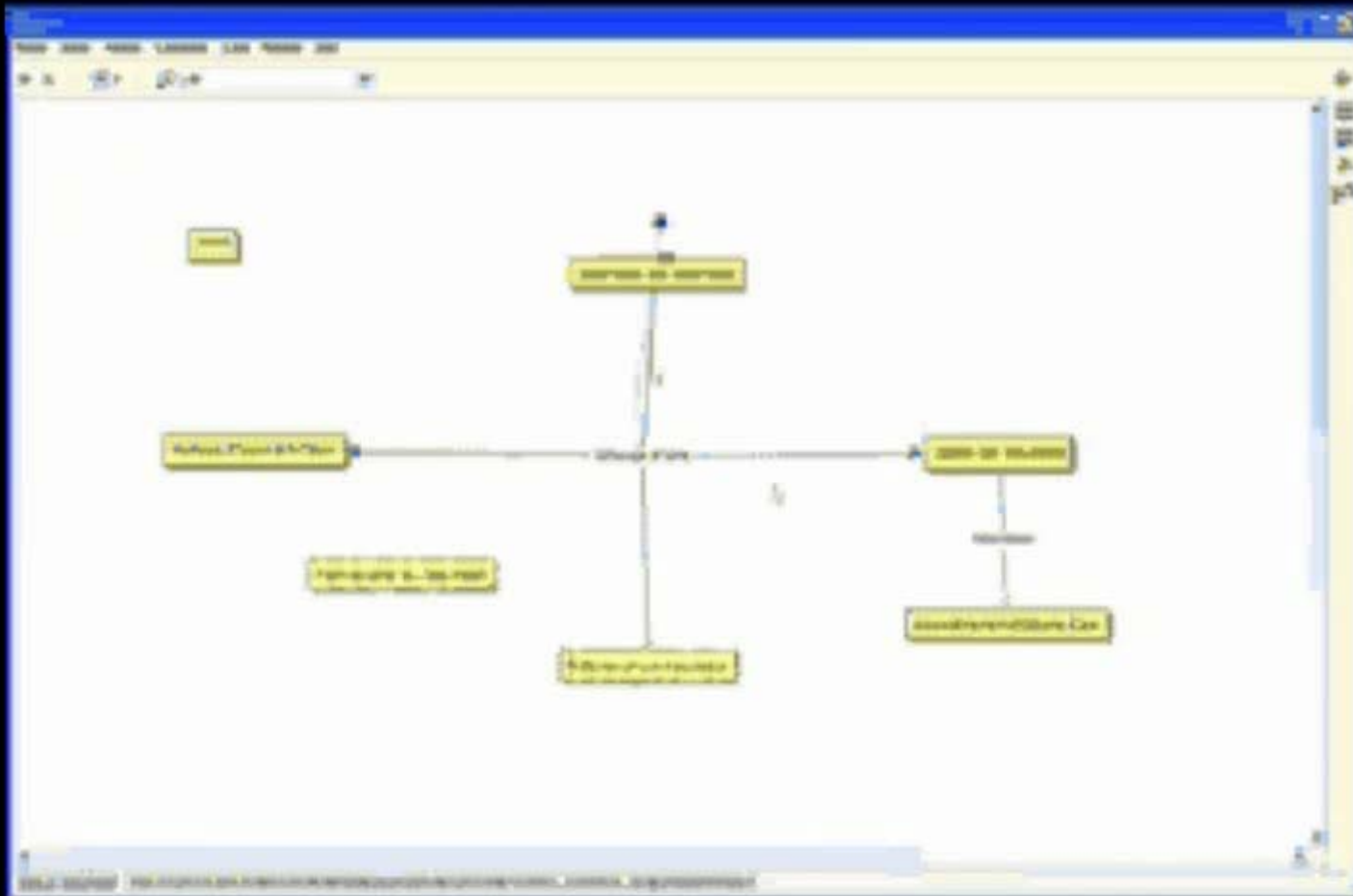
Additional interface elements include a 'Recording Information' window at the bottom left, a 'Tracking by Total' window at the bottom right, and a status bar at the very bottom with the text: 'STUDY: shoutspace_pre10 STIMULUS: 1x_SHOUT RECORDING: (traces)1 FRAME: scene2.png TIME SEGMENT: Only include features made interval(917574,1176583) ms...'.

Gaze recurrence predicts team performance



Gaze distance predicts misunderstandings





Gazes during the first minute predicts knowledge level (HMM → 96% accuracy)

```

36_A T---TTTT--TTTTTTTTTYYYIICC-CCI I SSSQQQQQQQQQQQQQQQQQQMMMQQQQQQYKKK---KKK-----
16_A ---PPP--Y--YI-I-----IRRRRPPPPYY-----PPPEEEEEIIIEECCYYL-----
44_B -----
18_A -----
55_B -----
13_A --EEYYYYYYYLLYYYY-----YRRRRDDDDD-----RRRRRLLYYYYYYYLLYYLL-----
26_B RR--RRR-----RRRR-----RR--R-----DDT--TTTTPPPPDDFFFFF-----
29_A -----
54_A ---DDYDDDDDD-----LLLLWYY--YYYWRRRR-----RwWLLLLLNMMI
50_B ---YYYYYYYYYY-----YYYYYYY--YYYYYYY-----YYYYYYYYYY
37_B QQQQLLLLLSSSSSSSS-----SSSSSYSSS-----RRRDD--DLLLLL-----
38_B PS--SSSYYYY-PPSS--YPPRRQRRRRR-----RR--FF--FYYQQ--YYYYY--YYYIIRRPPPP
14_B NR--RRRRRYYYNNRRRRRRNNNN--RRRR-----RRRRRRNNRRRRRRNNNN-----

```

High score at pre-test

```

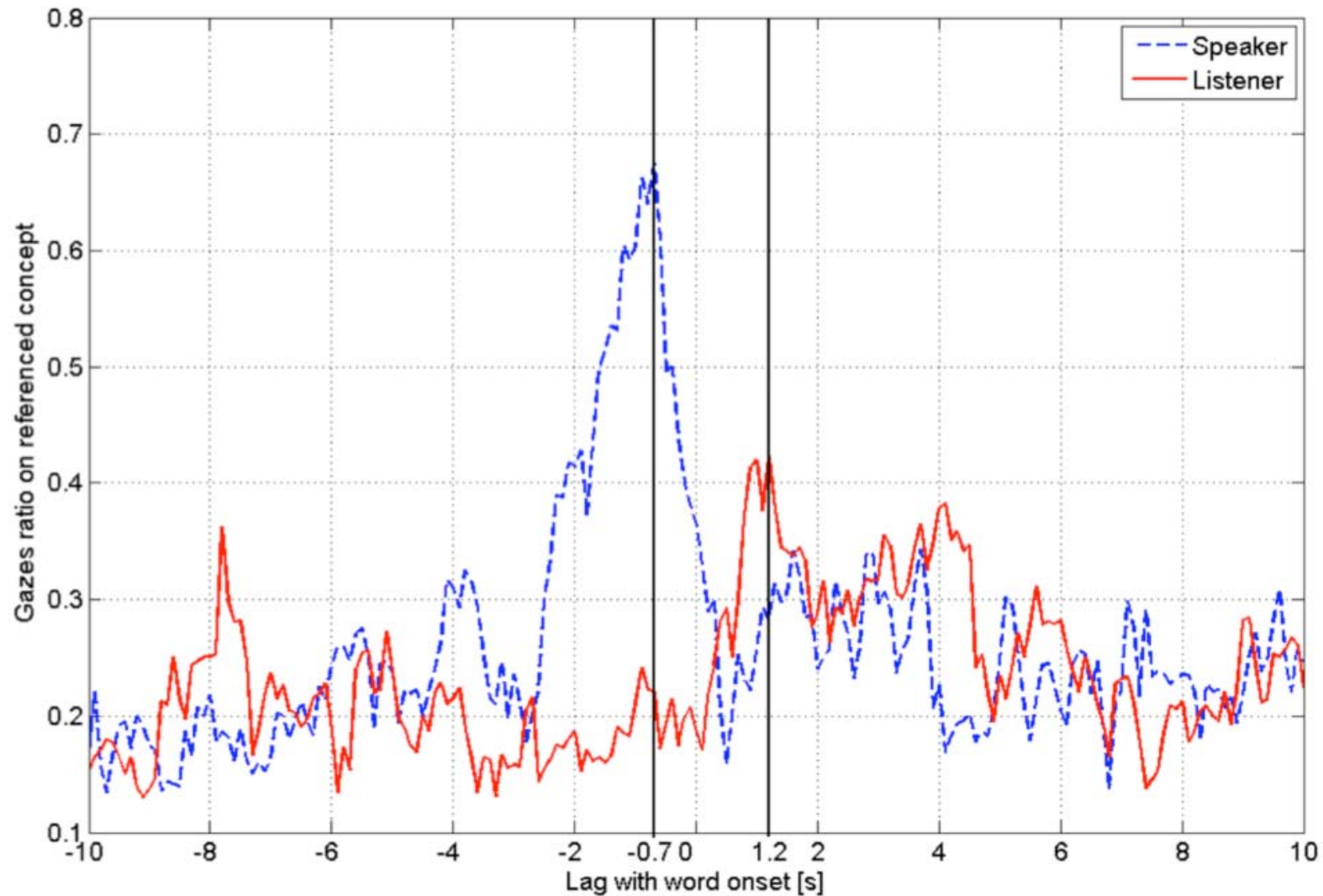
12_A --RRRRRRRRRRK-----KRRRRRRYYYYYYYRCCYYCCCCCYRRCCCRRRRRRRCCCNNNNNNNNNMMMMMYMYMMRRDI
11_A -----
20_A ---CRRRRR-CRRR-----HHHRRRRRRRRRRRICYYPPYCCCCPPP-----PPP-----PPPPYYI
14_A EEEEEYYYYYYYY-----YYYYPPP-----PYYYYYYMM-----MMCCCM--MYEEEEYY-----
29_B ---RRRRRPEE-----RRRPYLEEG-----
49_A --YYYYYYYYY-----YYYYYYYYYYKKKKCCCCCYYCC-----IYYYYYYNNYYYNNNDDD-----
27_A CCRRYYYYYCC-----EEYPPYYYYYYYYMMKKKKCN-----NNNNKKK--KPPKKKKW-----
18_B ---GGGGGGGGGGGGCCCCCCCCGGGGGI I I I SGGI IC C C C G G CCCGGNN-----NNNNGGMMMDDMSSSSCCSSRREEEY
15_A ---PPPGGGAA-----AAAAAAAA-----AAAA-----
54_B TTRYYYLQQQ-----QQPQQY-----TTTEGGYPP-----RRPPCCC--CCCYCCNN-----
10_A -----
17_A ---YYYYYCC-----RYYYYYHHHEEE-----EEEECCC-----I I I H-----
40_B -----DDDD-----

```

Low score at pre-test

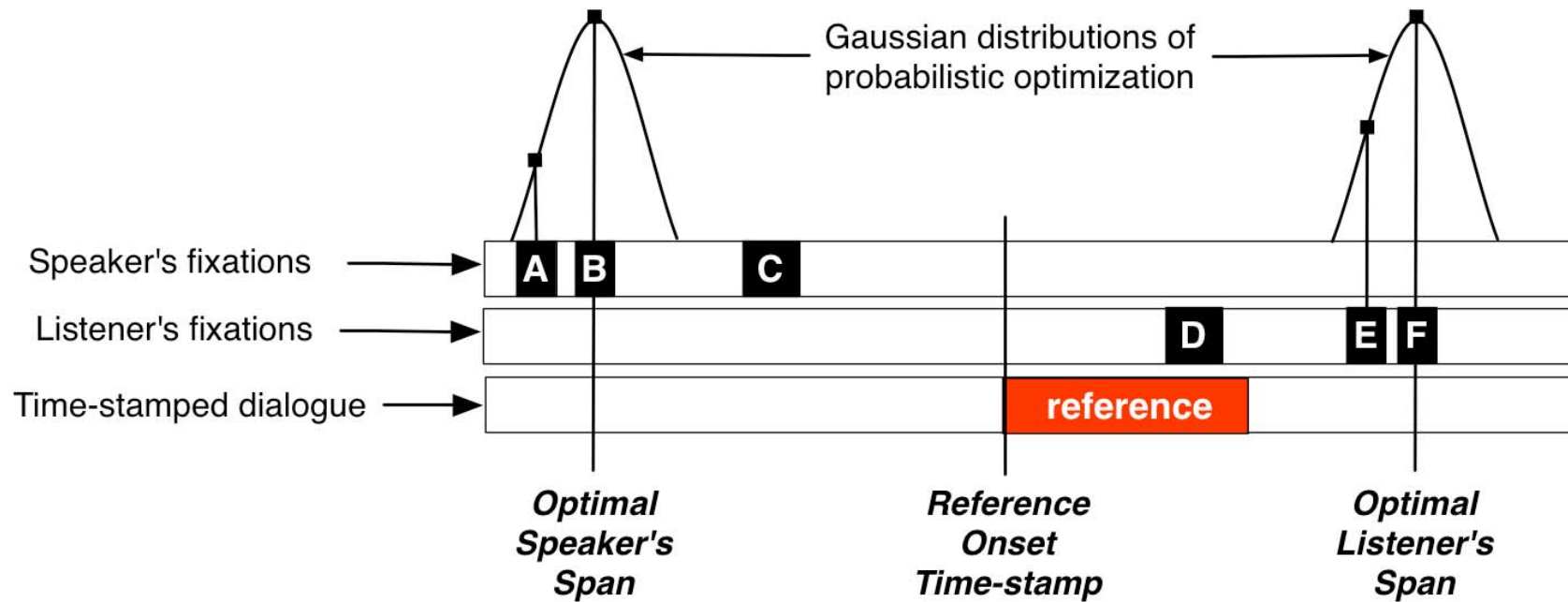
Yan Liu, Pei-Yun Hsueh, Jennifer Lai (IBM Watson Labs)

Mirweis Sangin, Marc-Antoine Nüssli, Patrick Jermann

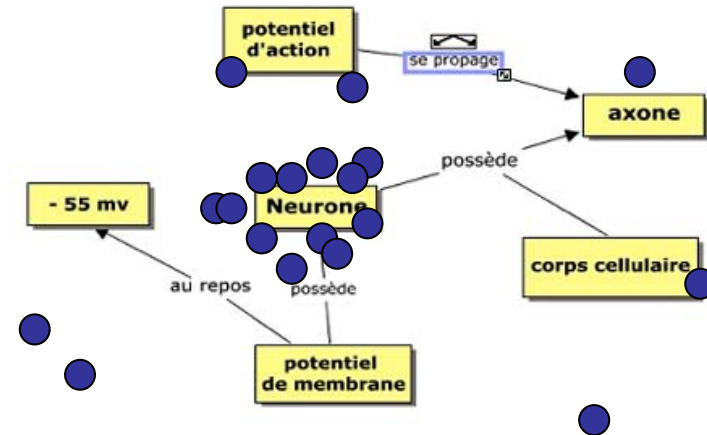
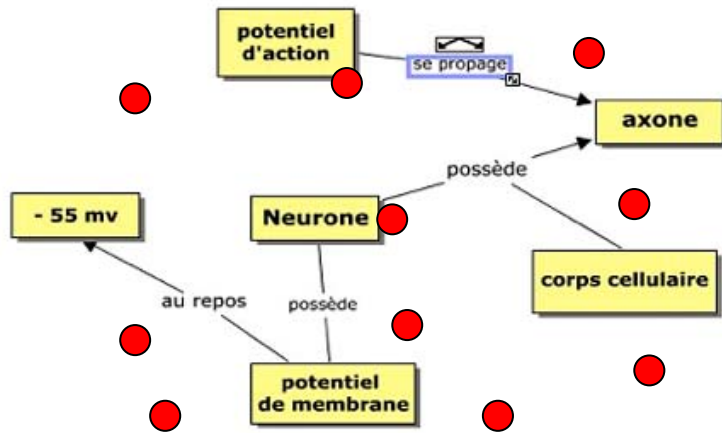


Average gaze ratio on referred concept for different time-spans from the verbal reference onset for manually detected verbal references

REGARD (REmote Gaze-Aware Reference Detector)



REGARD (REmote Gaze-Aware Reference Detector)



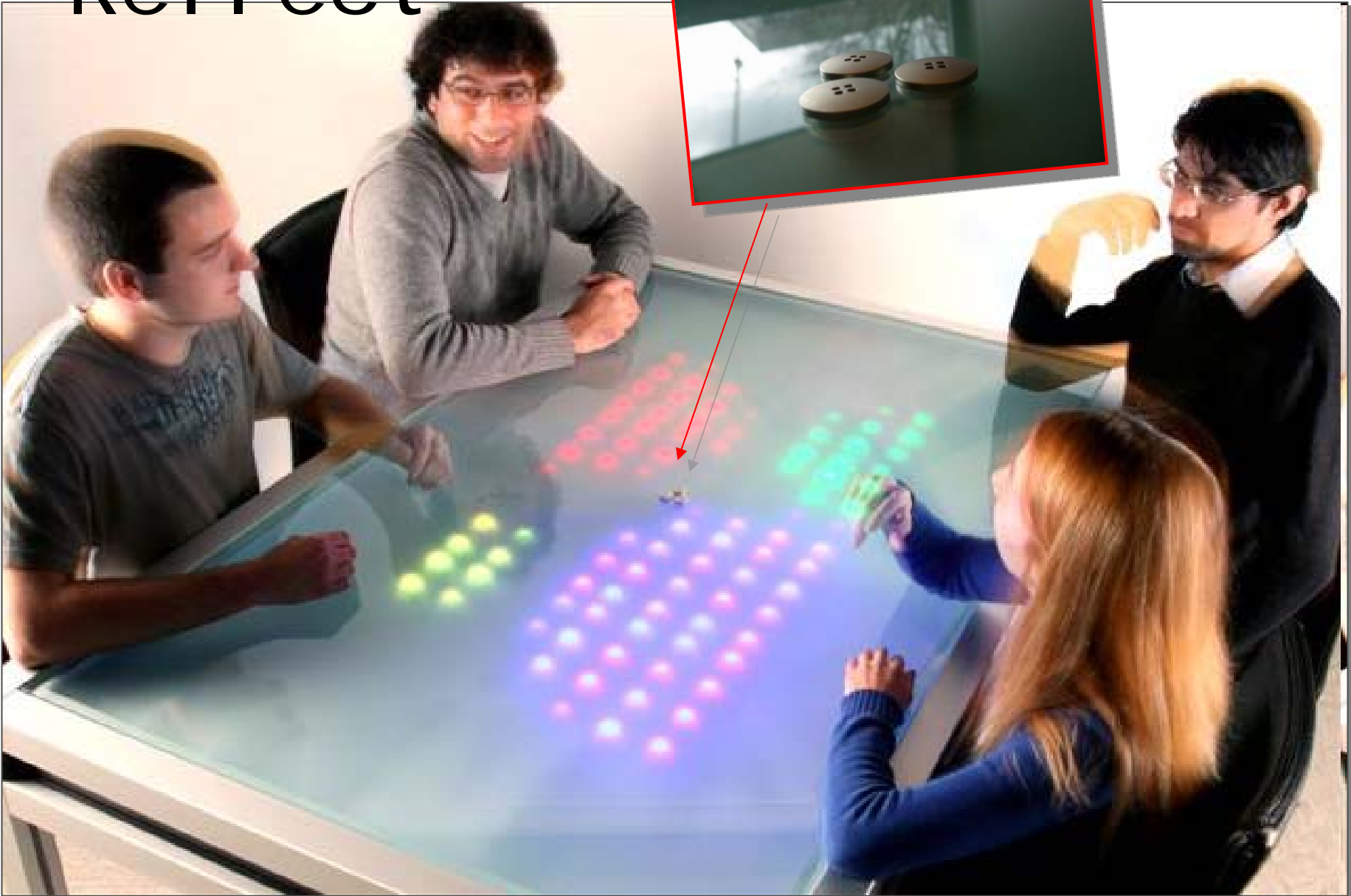
John says "difficult"

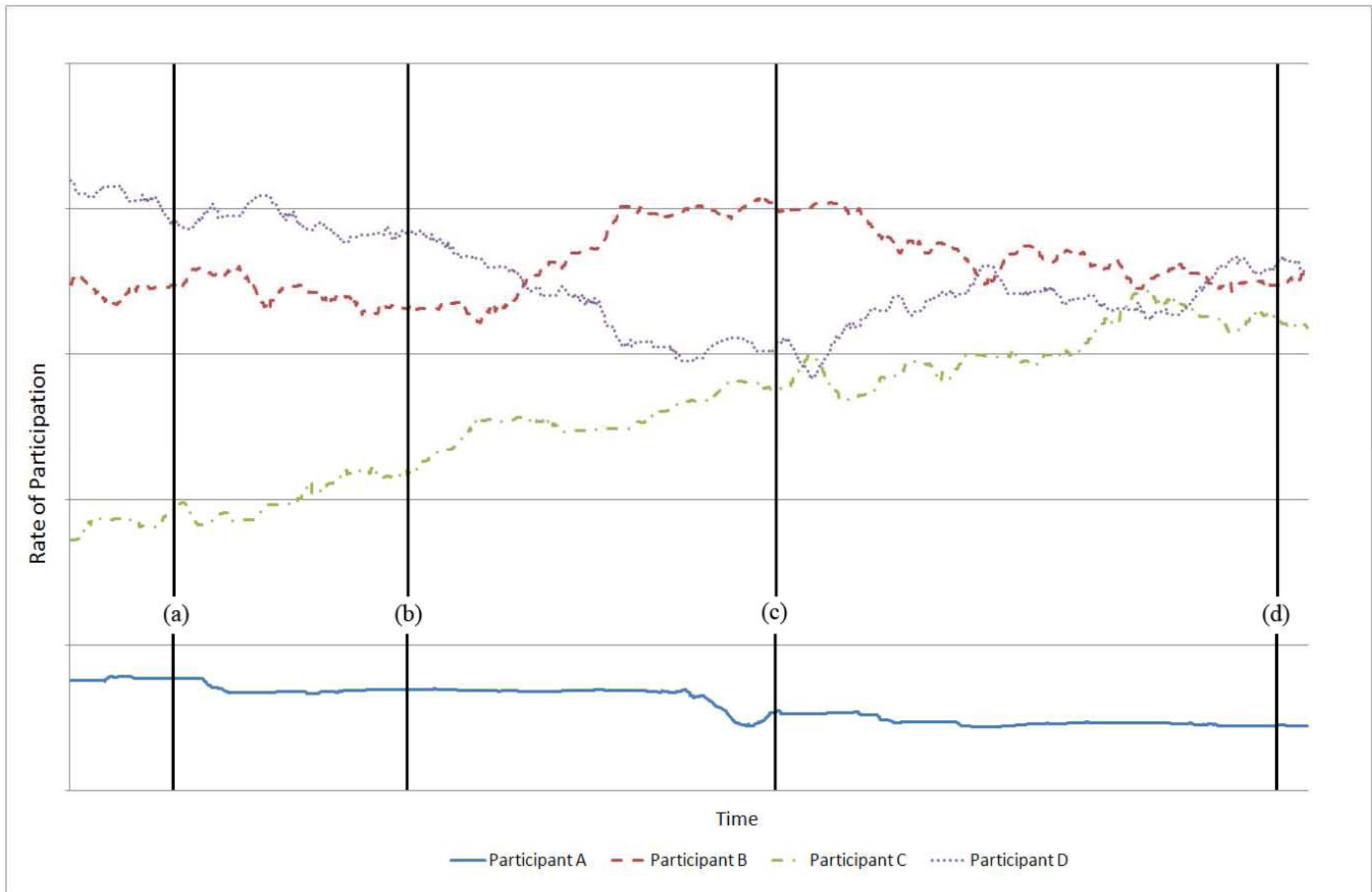
John says "neurone"

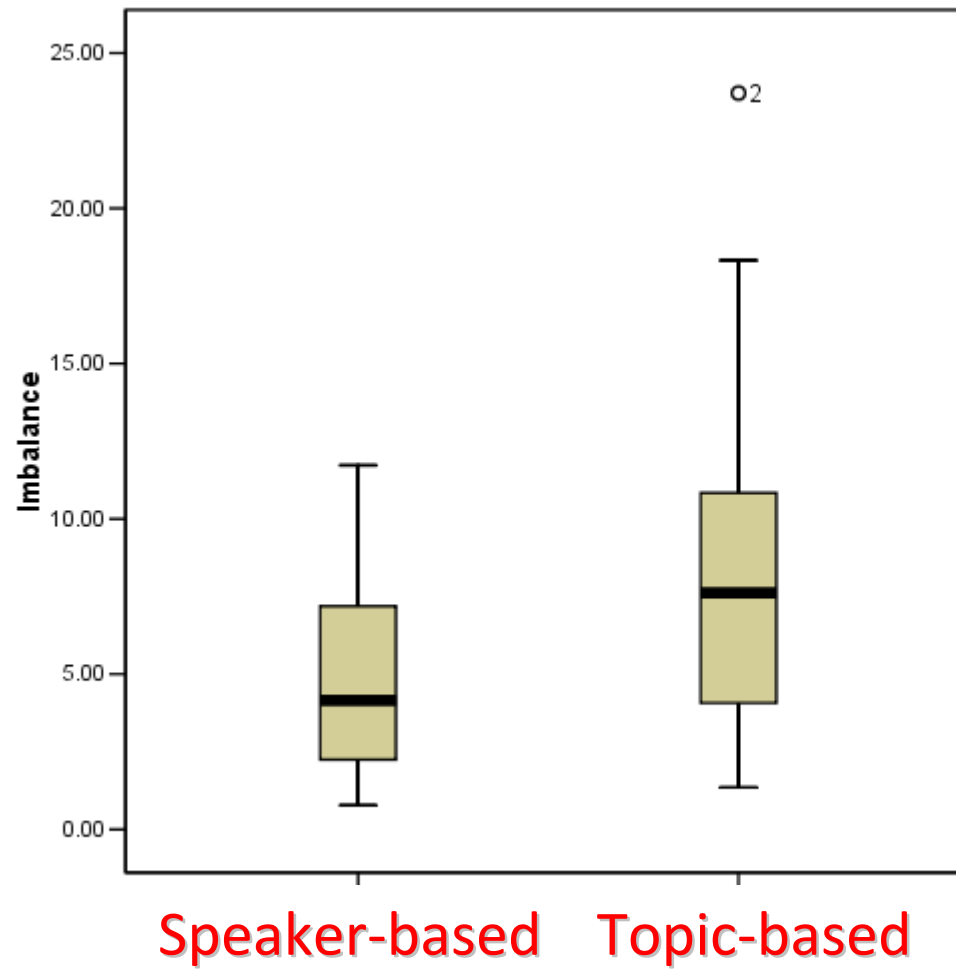
	Classified as Common-words	Classified as Concept-words		Totals
		Correct matches	Incorrect matches	
Actual Common-words	112	9		121
Actual Concept-words	14	43	4	61
Totals	126	56		182

Kappa = 0.71

Reflect







T-Test: $t = 2.176$, $p = 0.036$

Not smart
(Mirroring < Predicting)

No Login !

Low resolution

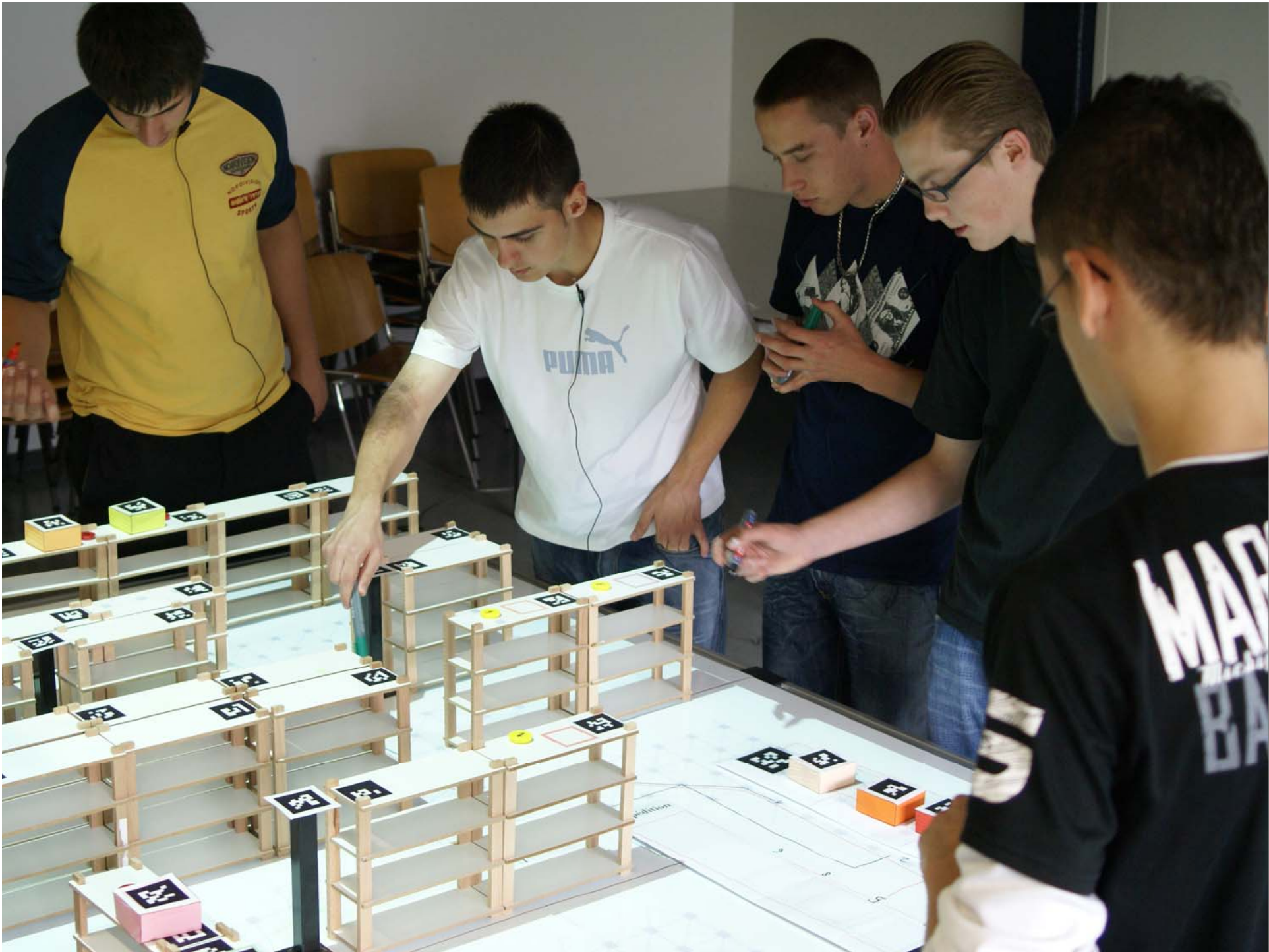
User' s perspective

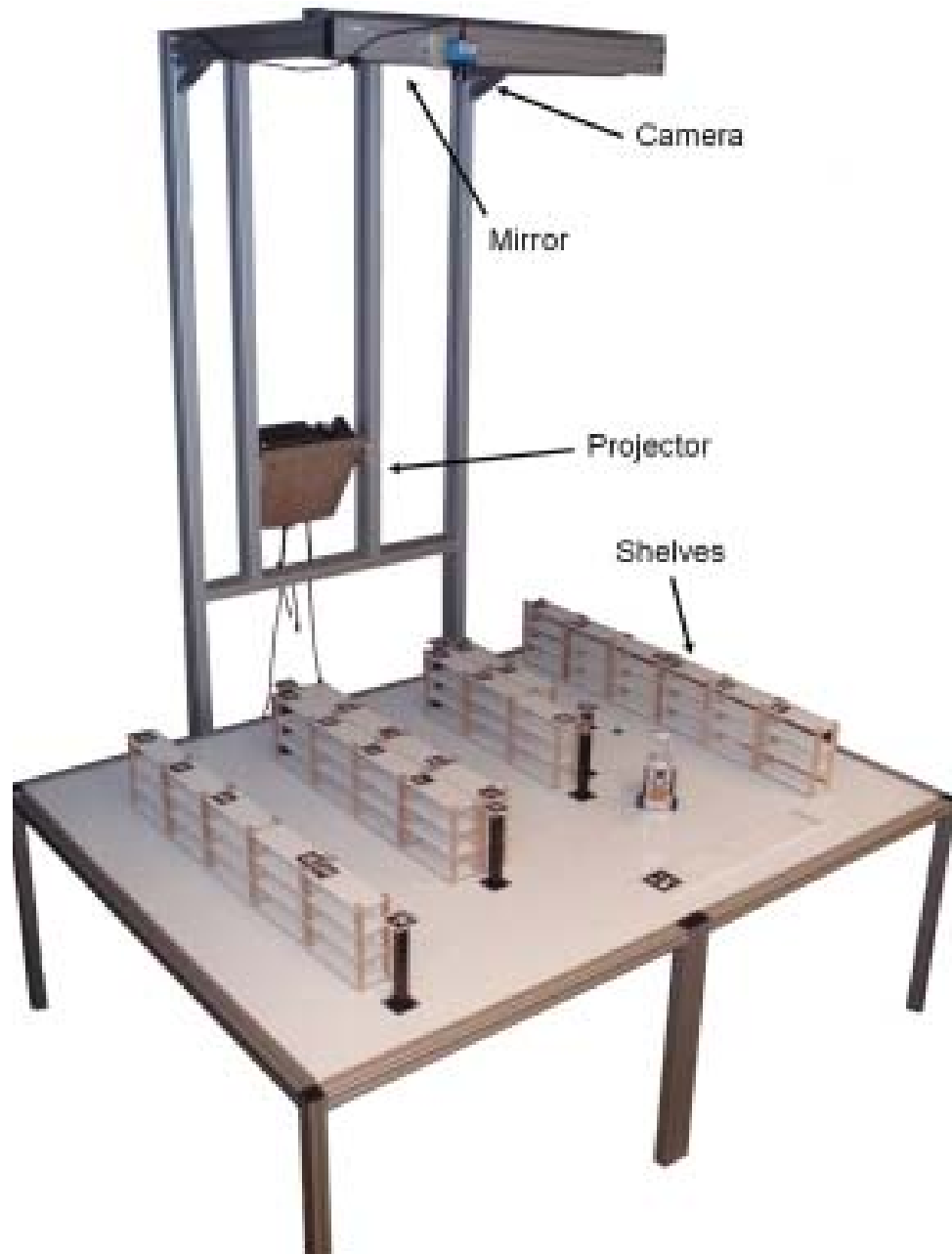
(Before) Ethnography }
(Early) Prototyping }
(Later) Usability
(After) Experiments







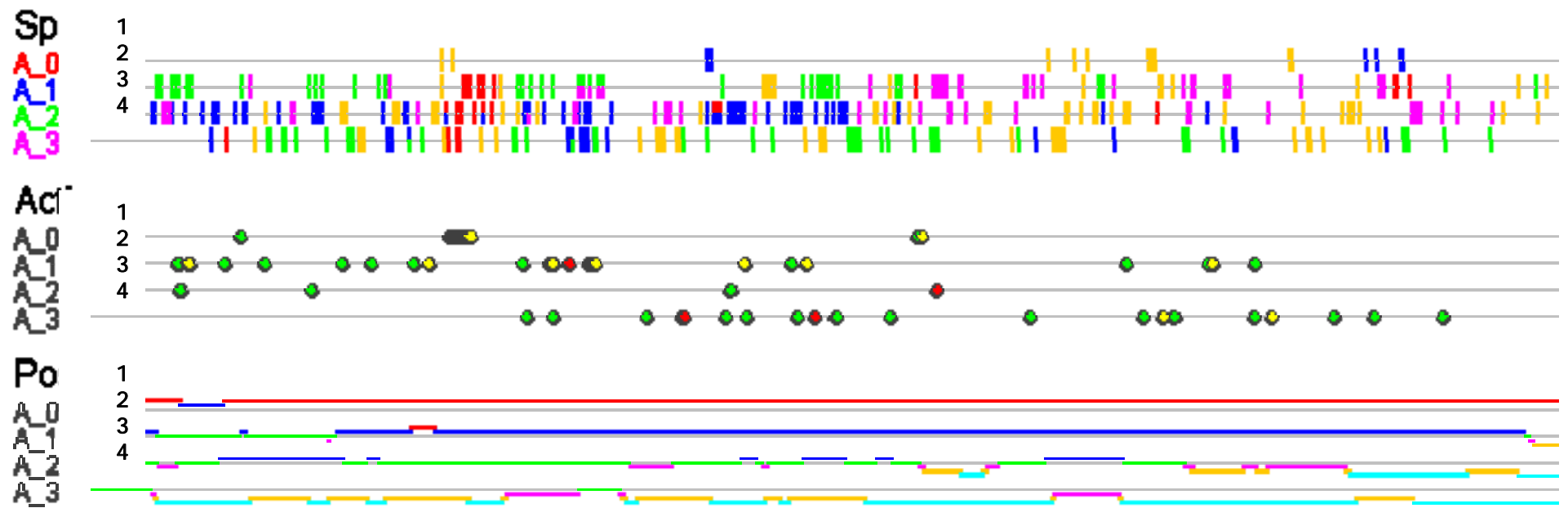


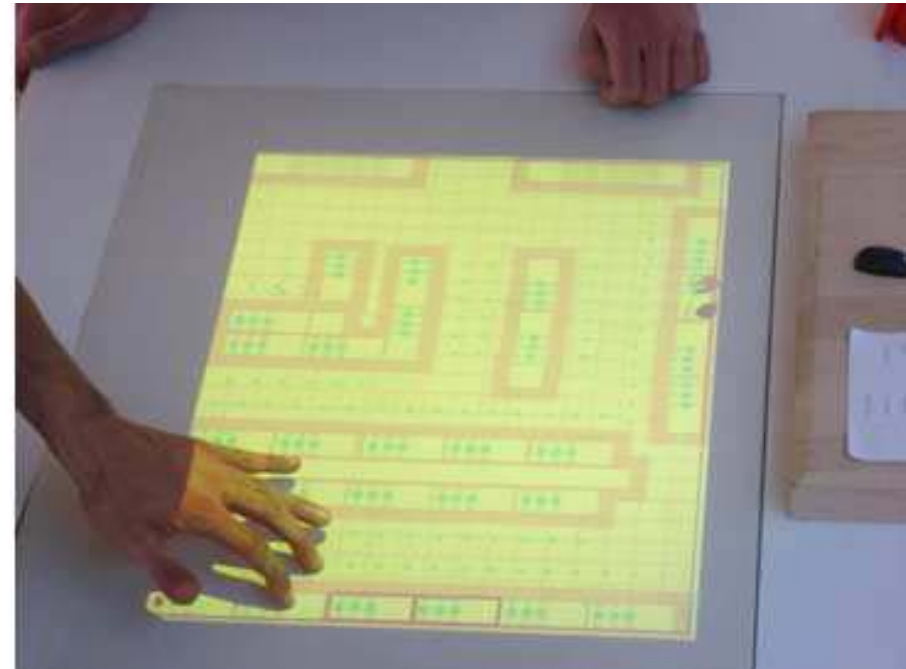
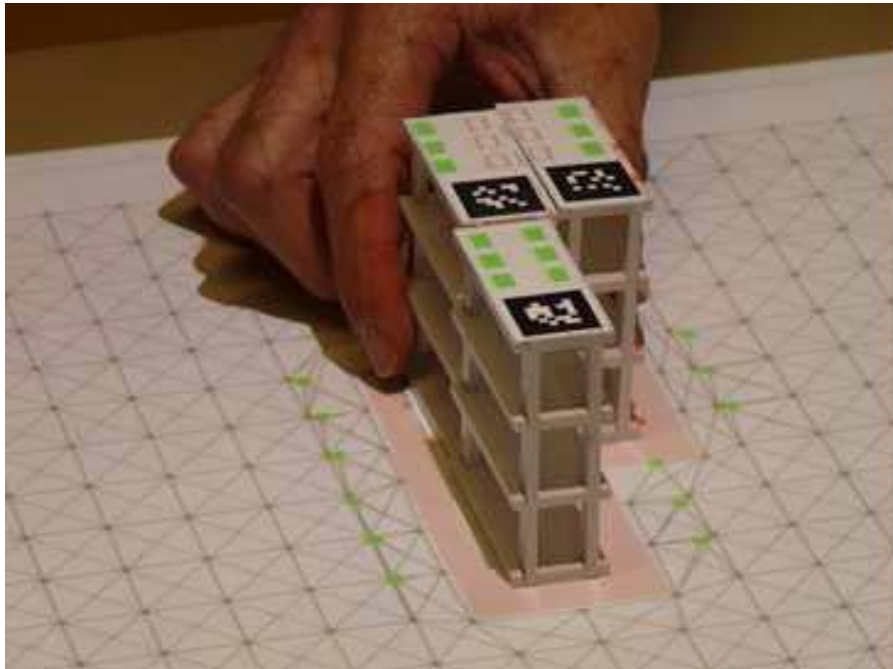


Guillaume Zufferey, Patrick Jermann, Son Do-Lenh, Olivier Guédât, Betrand Schneider

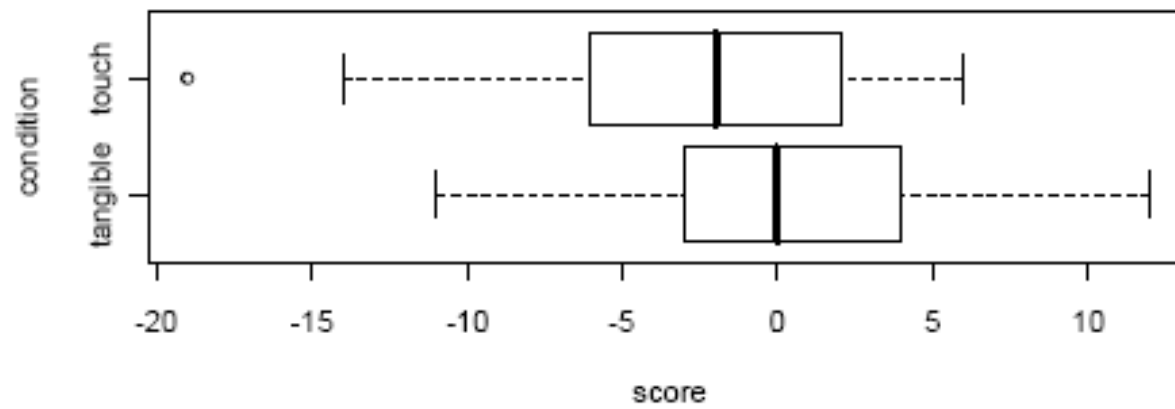
TinkerTable

Guillaume Zufferey, Patrick Jermann





Learning gain



$$F(1, 37) = 6.68, p < .05$$



Engins de manutention

But: Comprendre l'impact du choix de l'engin de manutention sur la capacité de stockage et le temps de travail

Référence: Classeur Stockage (1.1.7)



Type d'engin

Contrepoids



Mât rétractable



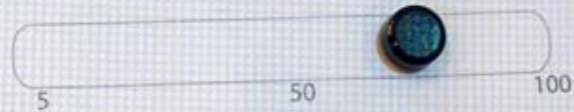
Préparateur de commande



Mât rétractable latéral



Nombre de palettes à sortir du stock



Simulation

Vitesse



Start



Pause



Dual-T Project 3



Technologies for Vocational Training

Leading House funded by the
Swiss Federal Office for
Professional Education and Technology



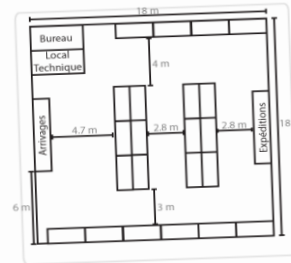
Surfaces de stockage



Entrepôt



- 1) Implantez l'entrepôt dont le plan est dessiné sur la figure ci-contre.



- 2) Reportez les valeurs des surfaces de stockage dans les cases prévues de la feuille de travail ci-contre.

Que pensez-vous du degré d'utilisation de cet entrepôt?

Comment pourriez-vous l'augmenter? Pourquoi est-ce important?



Surfaces de stockage



Surf. brute = largeur x hauteur = x = m²

Surf. brute de stockage = Surf. brute - locaux annexes = - = m²

Surf. nette de stockage = Surf. brute de stockage - Allées de circulation = - = m²

Surf. nette de stockage = Nombre d'étagères x Surf. d'une étagère = x = m²

Degré d'utilisation = $\frac{\text{Surf. nette de stockage}}{\text{Surf. brute de stockage}}$ = / = %

- 3) Simulez 30 minutes de travail avec 1 gerbeur, et reportez les valeurs dans les cases prévues ci-contre. Combien faudrait-il de gerbeurs pour sortir 100 palettes en 1 heure?

A votre avis, quel est le type de chariot le plus efficace dans cet entrepôt?



Exploitation



Chariots élévateurs		Heure :	
Type	Nombre		
<input type="radio"/> Gerbeur	<input type="radio"/> 1	Palettes sorties :	Par jour:
<input type="radio"/> Mat rétract.	<input type="radio"/> 2	Article 1 :	Article 1 :
<input type="radio"/> Contrepoids	<input type="radio"/> 3	Article 2 :	Article 2 :
	<input type="radio"/> 4	Article 3 :	Article 3 :
	<input type="radio"/> 5	Temps moyen par palettes (sec.): <input type="text"/>	

ABC oui non



2' 000

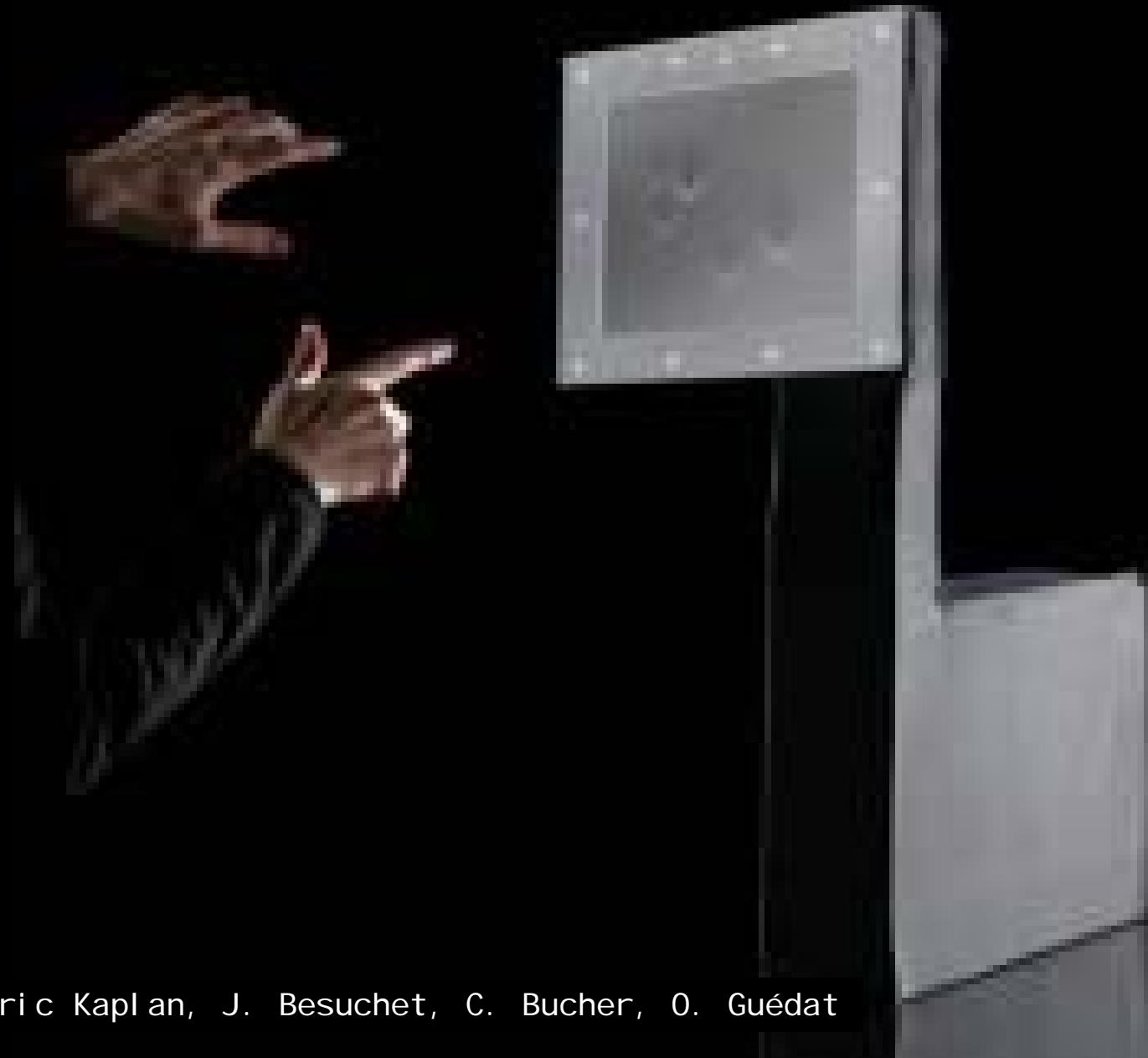


50' 000









QB1

Frédéric Kaplan, J. Besuchet, C. Bucher, O. Guédat

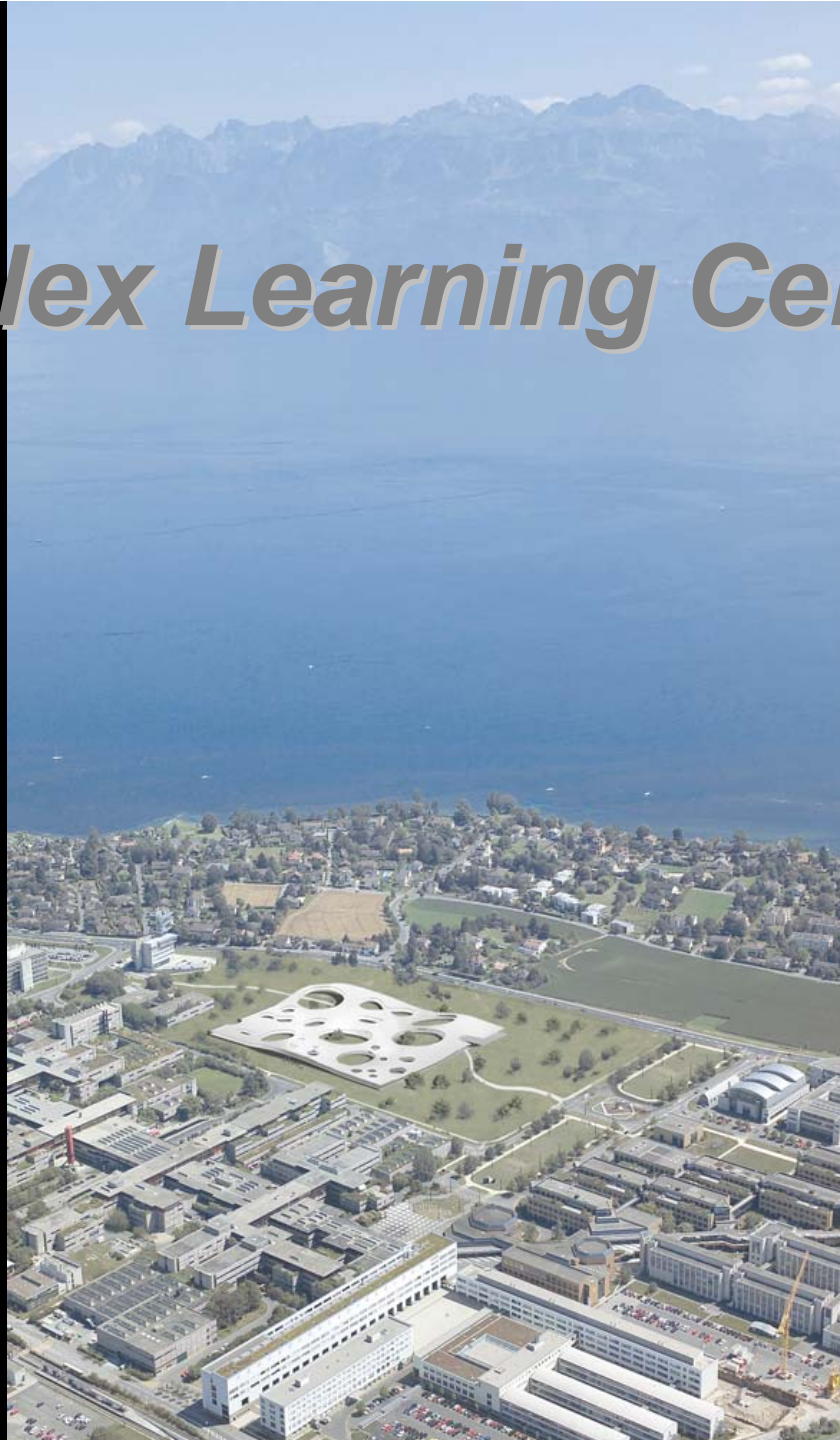


Frédéric Kaplan, J. Besuchet, C. Bucher, O. Guédat
Pierre Willenbourg, EPFL

The Approach

- Not e-Learning but augmented **teamspace**
- “Modest” = not smart, **light**, semi-ambient,
- **Physical**, not virtual
- User-oriented = less bla-bla, more **data**

Rolex Learning Center



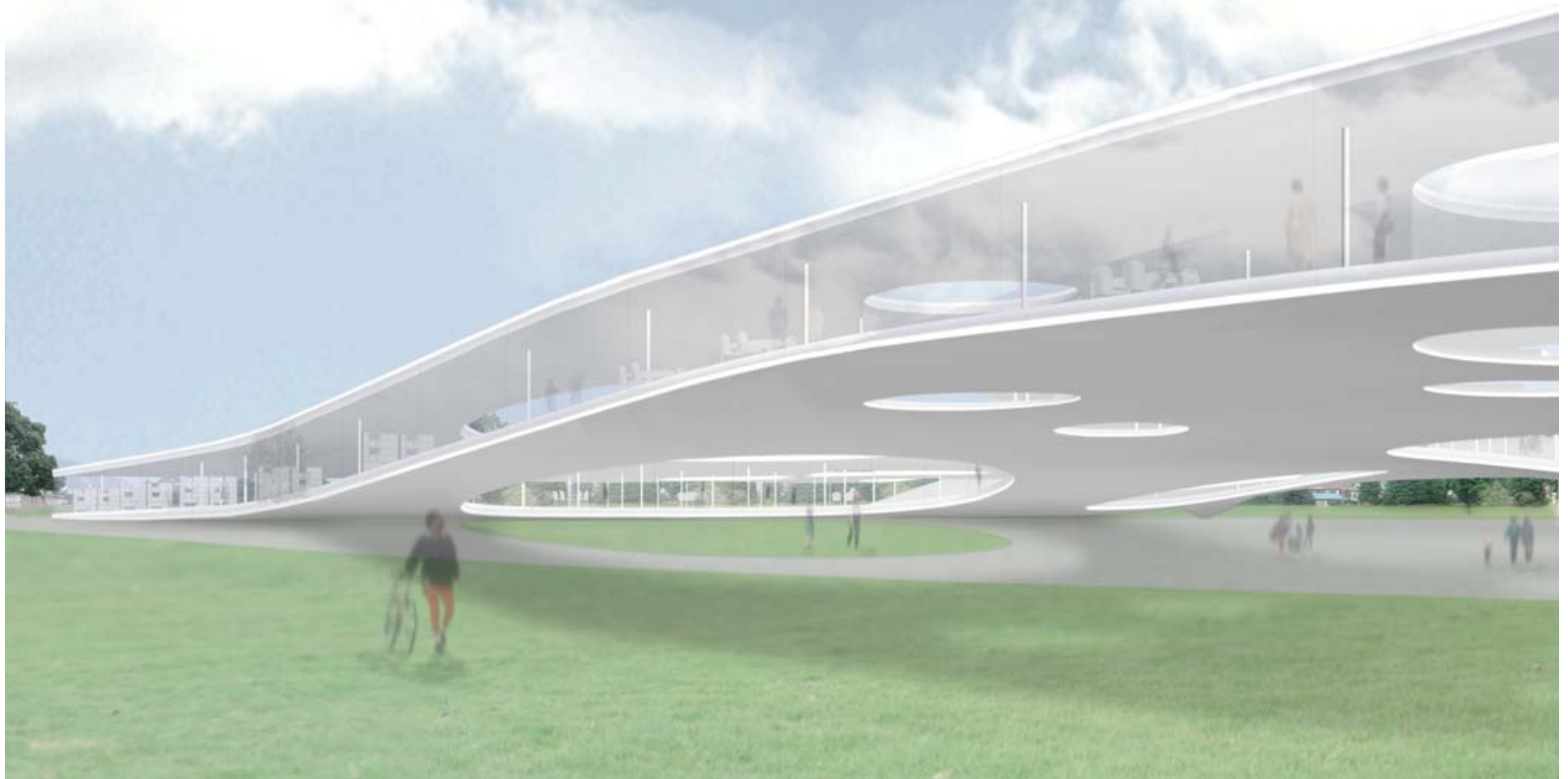
SANAA

SANAA



Rolex Learning Center (EPFL), Architects: SANAA

SANAA



Rolex Learning Center (EPFL), Architects: SANAA

SANAA



Rolex Learning Center (EPFL), Architects: SANAA

SANAA



Rolex Learning Center (EPFL), Architects: SANAA

SANAA



Rolex Learning Center (EPFL), Architects: SANAA

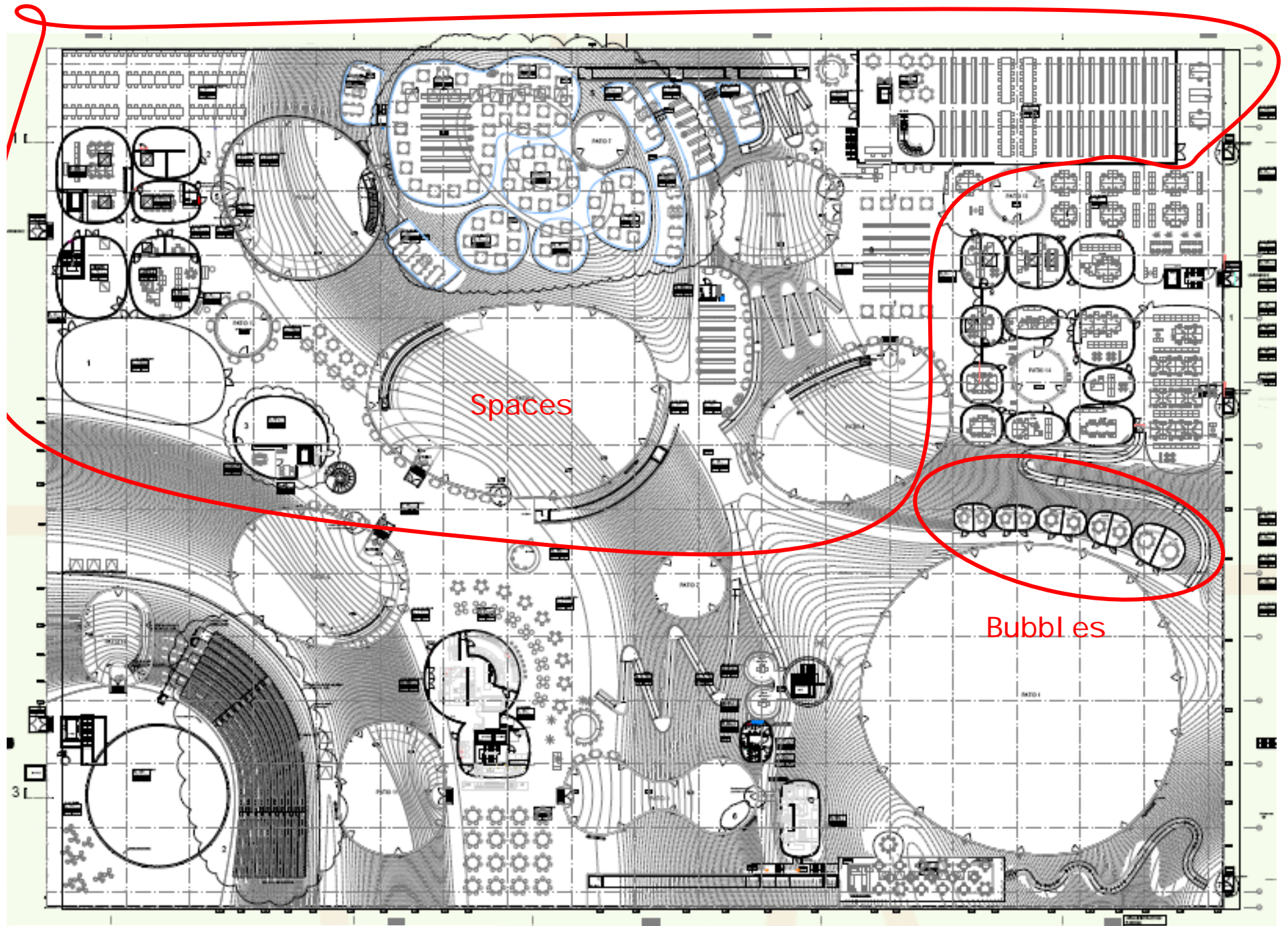








Rolex Learning Center (EPFL), Architects: SAANA



Spaces

Bubbles

Rolex Learning Center (EPFL), Architects: SAANA

Goal in IM2/Phase III

bits of IM2 → augment social spaces

(1 PhD student)



CRAFT. EPFL. CH Guillaume Zufferey, Patrick Jerman, Gaëlle Molinari, Frédéric Kaplan, Son Do-Lenh, Khal ed Bachour, Bertrand Schneider, Quentin Bonnard, Andrea Mazzei, Wolfgang Hokenmaier, Olivier Guedat, Cecile Bucher, Jonathan Besuchet, Jean-Baptiste Haué, Marc-Antoine Nüssli, Mirweis Sangin, Mauro Cherubini, Fabrice Hong, ...