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# Analyse et modélisation de l'interaction corporelle dans le cadre d'un entretien d'embauche.

Presentation · June 2015

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# Entretien d'embauche

Analyse et modélisation de l'interaction corporelle

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Étude réalisée au LIMSI-CNRS

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# PRESENTATION

1. Context
2. Study goals
3. COMPARSE project
4. Interaction analysis: corpus / sensing / segmenting / analyzing / Results
5. Interaction modeling: in progress
6. Summary and perspectives

# JOB INTERVIEW

## I. Context

### JOB INTERVIEWS AS STRESSFUL SITUATIONS

#### ANALYSES

Job interviews: situation appraisal (ego-threat)

Trier Social Stress Test (Kirschbaum et al 1993)



#### APPLICATIONS

MACH (Hoque et al. 2013)

CICERO (Batrinca et al. 2013)

TARDIS (Anderson et al. 2013)



FEW BODILY INTERACTION (SYNCHRONY / MIMICRY)

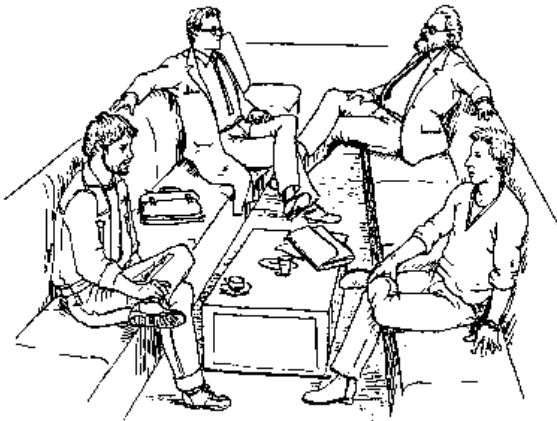
# JOB INTERVIEW

## I. Context

(Chartrand and Lakin 2013)

### MIMICRY

Motor resonance hypothesis  
Static matching  
Timing? Strength?



(Bull 1987)

(Delaherche et al. 2012)

### SYNCHRONY

Self-organizing systems  
Dynamic entrainment  
Time scale?



(Ramseyer and Tschacher 2006)

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↓

### POSITIVE CONSEQUENCES

Rapport  
Closeness

Pro-social behaviors

# JOB INTERVIEW

## I. Context

### SYNCHRONY/MIMICRY IN NON AFFILIATIVE SITUATIONS

Negative mood	=>	absence of mimicry ( van Baaren et al. 2006)
Late confederate	=>	disrupted synchrony (Miles et al. 2010)
Conflicting discussion	=>	disrupted synchrony (Paxton and Dale 2013)

### INTERPRETATIONS

Negative feelings about a situation	=>	more controlled behaviors
Negative feelings about a person	=>	avoidance behaviors

### DISRUPTED YET PRESENT ?

# JOB INTERVIEW

## 2. Study goals

Analysis  
↓  
Modeling

of a job interview as a social bodily interaction  
(taking into account individual differences)

### ANALYSIS

Bodily interaction in a constrained non affiliative task?

Individual differences modulate interpersonal processes?

### MODELING

Modeling of the full body interaction to animate a virtual interviewer ?

# JOB INTERVIEW

## 3. COMPARSE project

Projet ANR COMPARSE

Cognition, Motivation and Personality for the Adaptation and emotional Regulation by Empathic virtual Simulation

TEAMS

CIAMS, University Paris South

LIMSI-CNRS

ECIPSY, University Versailles-St-Quentin CTI from the University of Orleans

### Job Interview

Scenari

Card Game

Stroop task

Job interview





# JOB INTERVIEW

## 4. Interaction analysis: Corpus

### TASK FOCUS

5 minutes presentation phase

### PARTICIPANTS

31 (12 males and 19 females, with valid data)

### INDIVIDUAL DIFFERENCES

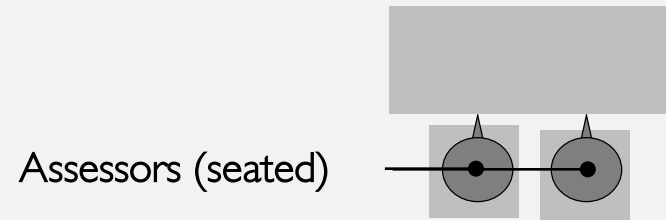
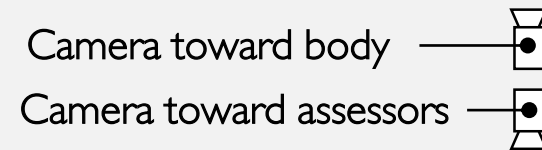
Big Five: Neuroticism, Extraversion

### VALIDATION

Emotion Self-report

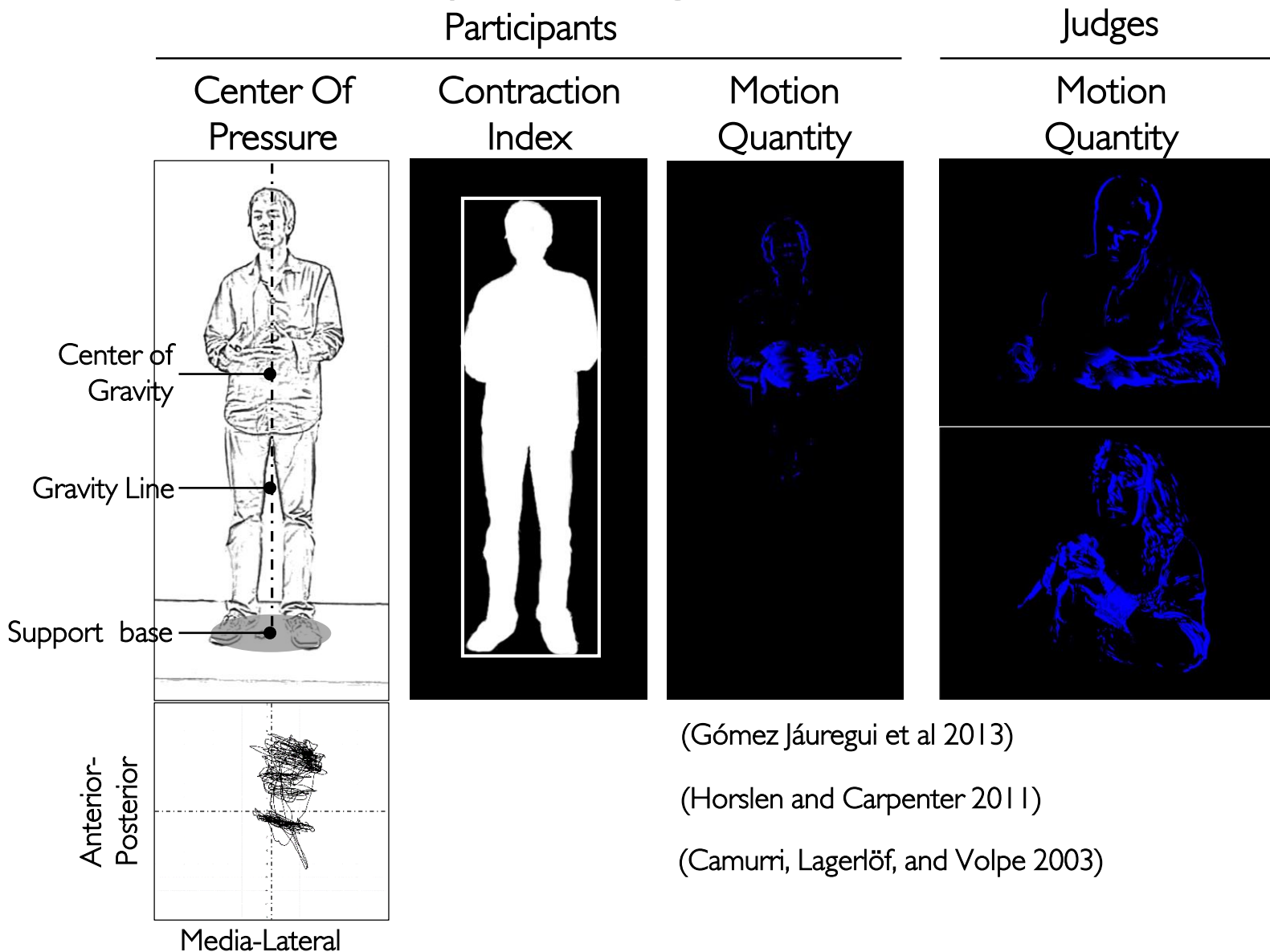
Physiological arousal

### SETUP



# JOB INTERVIEW

## 4. Interaction analysis: Sensing

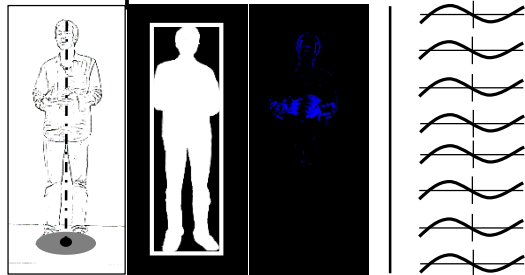


# JOB INTERVIEW

## 4. Interaction analysis: Segmenting

### TIME SERIES

#### Participant



8 time series

X

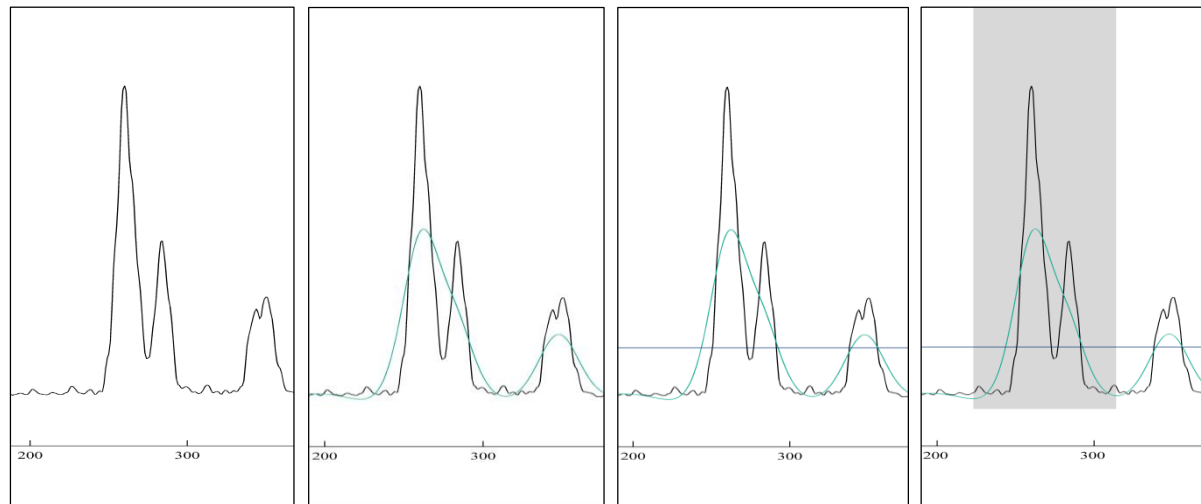
1 time series



#### Judge



### SEGMENTATION (on judges behaviors)



260 segments  
Postural moves  
4,2 per session  
5,6 seconds

2 corpus:  
Non-segmented  
Segmented

Step 1

Step 2

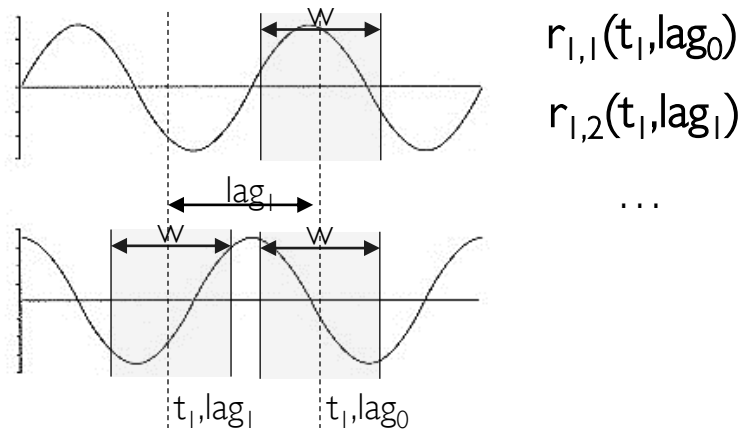
Step 3

Step 4

# JOB INTERVIEW

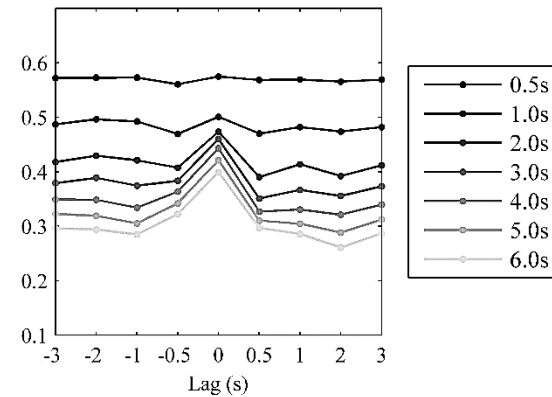
## 4. Interaction analysis: Analyzing

### WINDOWED CROSS LAGGED CORRELATION

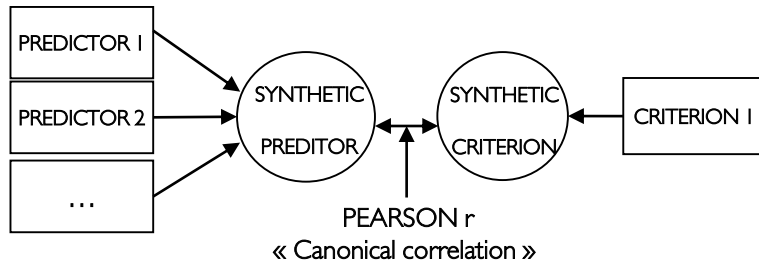


### TIME WINDOW CHOICE

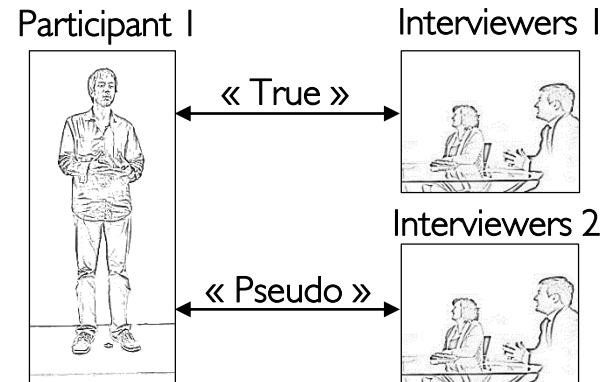
#### Reliability/Sensitivity Trade-Off



### CANONICAL CORRELATION



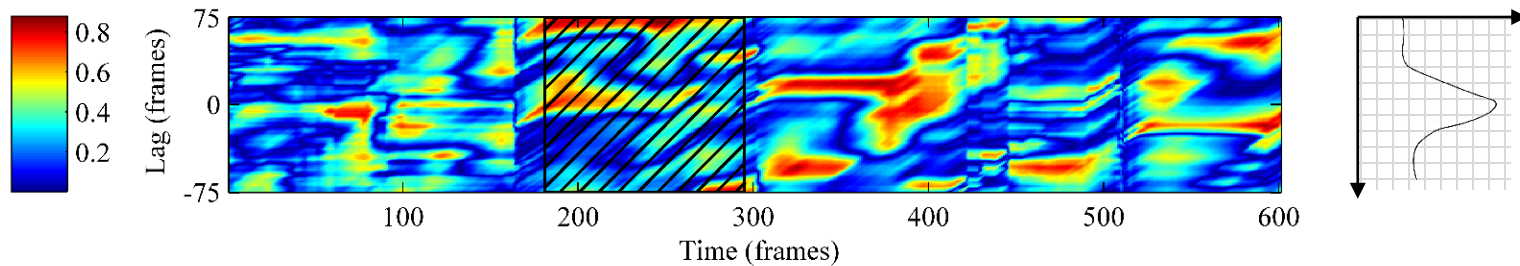
### PSEUDO INTERACTIONS



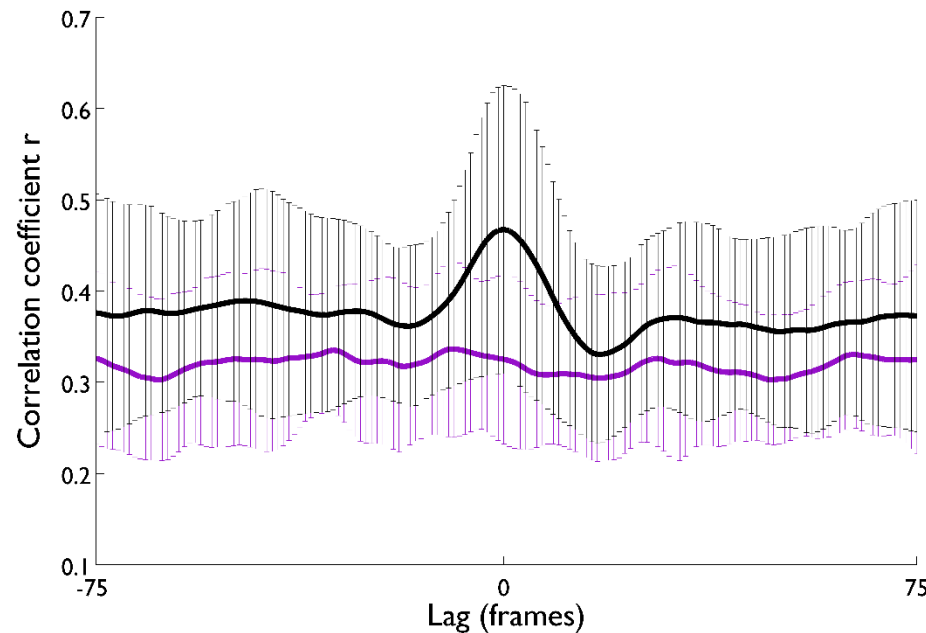
# JOB INTERVIEW

## 4. Interaction analysis: Results

### WINDOWED CROSS LAGGED CORRELATIONS



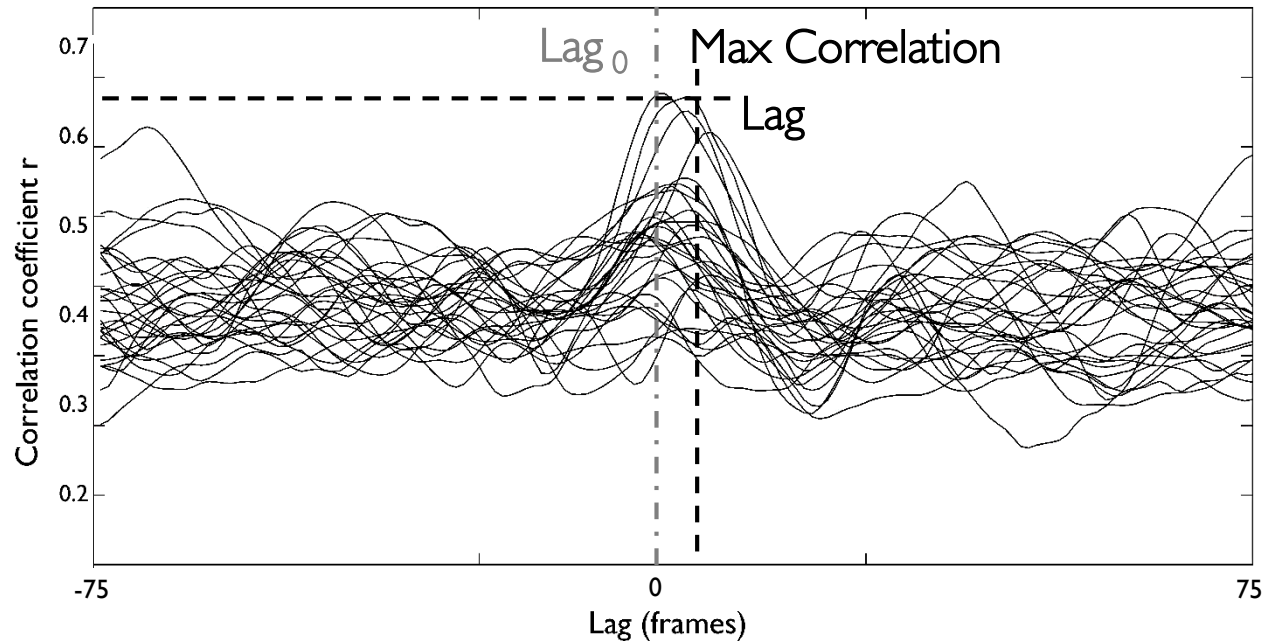
### PRESENCE OF SYNCHRONY ?



31 Sessions

# JOB INTERVIEW

## 4. Interaction analysis: Results



Negative emotions = more controlled behaviors

	Hypotheses		Results	
	Correlation	Lag	Correlation	Lag
Neuroticism	-	X	-,365 (p=0,05)	X
Extraversion	+	+	X	,329 (p=0,08)

# JOB INTERVIEW

## 5. Interaction modeling: in progress

### SCENARIO MINIMALISM

Seated, blurred face

Listening

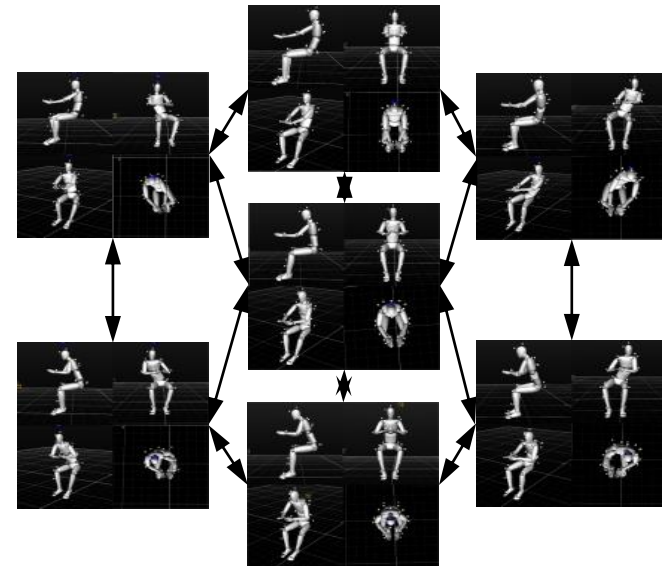
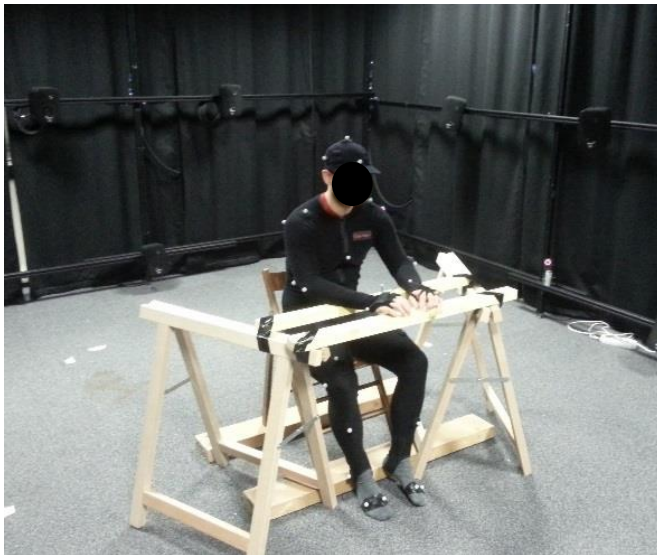
Taking note on a laptop (hand hidden)

Interactive postural moves



### MOTION CAPTURE

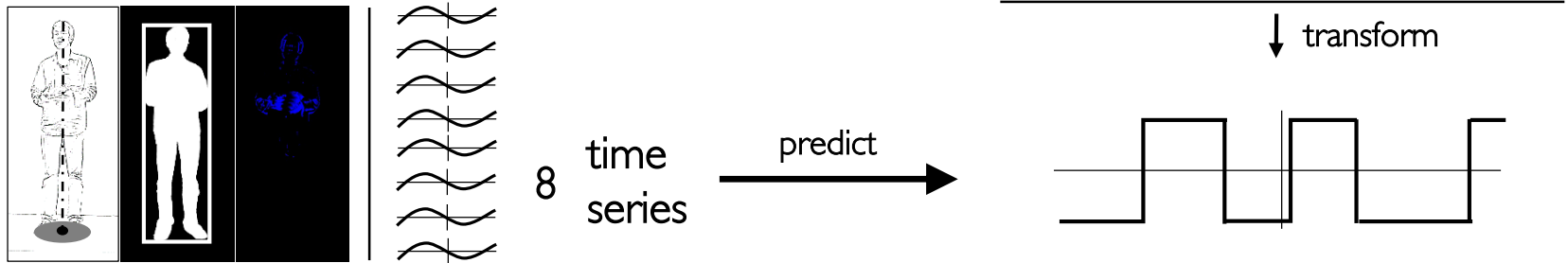
69 postural moves (position transitions and fidgets)



# JOB INTERVIEW

## 5. Interaction modeling: in progress

### PREDICTION OF POSTURAL MOVES TIMING



TO BE TESTED

Conditional Random Field / Hidden Markov Model

TO BE EVALUATED

Social presence

Stress elicitation



# JOB INTERVIEW

## 6. Summary and perspectives

1. Job interview as a social interaction: presence of synchrony
2. Individual differences related to interpersonal processes
3. Interactive postural moves for judges: in progress
4. Interactivity x task difficulty ?

Many thanks for your attention