Laugh when you’re winning

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for the
ILHAIRE Consortium

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eINTERFACE’13 Workshop - Universidade Nova de Lisboa, Lisbon
Midterm presentation
LWYW objectives

• Build an agent/system that can
  ▪ Play a convincing part in simple games
  ▪ Laugh naturally during game interactions

• Integrate new developments from ILHAIRE consortium from last 12 months
LWYW initial tasks

- Integrate existing modules for laughter detection, control and synthesis
- Develop game playing capabilities of avatar
- Yes/no game
System architecture - plan

Laughter detection & intensity estimation

Visual analysis
Acoustic analysis
Body movement analysis
Respiration analysis

Dialog Manager

Laughter and behavioural control

Laughter planner
Decision to AV synthesis

Context (Game state)

Behaviour/output

Audiovisual Laughter Synthesis
Game behaviour
Laugh when you're winning: Concept 6

System architecture - integration

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Multimodal laughter detection and intensity analysis

- Audio detection – ok within hardware constraints
- Smile detection (Kinect) – ok
- Body movement and respiration analysis – ok, fusion with other modalities yet to be finalised
Setup and scenario

- System and sensors integrated to test scenario
- Also for training data for dialog manager
Audiovisual laughter synthesis

• Phoneme-driven synthesis of facial movements e.g., lips, and some body movements

• Partially integrated into GRETA, Living Actor implementation in the next week

• Laughter planner to control decisions according to context e.g., ongoing speech
Game behaviour

• No dedicated game control module yet

• Behavioural rules require several decisions on present and past states, even in a simple game
System architecture - integration

- Laughter detection & intensity estimation
  - Visual analysis
  - Acoustic analysis
  - Body movement analysis
  - Respiration analysis

- Laughter and behavioural control
  - Dialog Manager
  - Laughter planner
  - Context (Game state)

- Decision to AV synthesis

- Behaviour/output
  - Audiovisual Laughter Synthesis
  - Game behaviour
System architecture - integration

Laughter detection & intensity estimation
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- Acoustic analysis
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- Respiration analysis

Dialog Manager

Context (Game state)

Audiovisual Laughter Synthesis

Game behaviour

Behaviour/output
LWYW remaining tasks

• Implementing game logic and behaviour
• Evaluation
Thank you