A videogame for developing body schema and imitation
Gerardo.Herrera@uv.es
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Introduction: Perception of Human Figures

“Portrait of a Mother”, by D; “Portrait of a Mother”, by Alex. (Bogdashina, 2003)
Introduction:
Perception of Human Figures
Introduction: Perception of Human Figures

- Understanding Pictograms
Introduction:
Perception of Human Figures

- What do you see here?
Introduction:
Perception of Human Figures

• And now?

水を
Introduction: Perception of Human Figures

• And now?

飲料水
Introduction: Perception of Human Figures

- Visual Recognition of Biological Motion is Impaired in Children With Autism (Blake et al, Psychological Science 2003)

*Biological Motion Task (Is there a human figure?)*
Introduction: Perception of Human Figures

- Visual Recognition of Biological Motion is Impaired in Children With Autism (Blake et al, Psychological Science 2003)

Global Form Task (look for “STOP” traffic sign)
Introduction: Perception of Human Figures

- Visual Recognition of Biological Motion is Impaired in Children With Autism (Blake et al, Psychological Science 2003)

**Fig. 3.** Mean $d'$ scores on the biological motion task (a) and mean angular threshold of jitter on the global-form task (b) for the autistic and typically developing samples. In both panels, the vertical bars denote ±1 SEM.
Introduction: Perception of Human Figures

Instrumental and expressive gestures

- People with autism with lower level of development have difficulties using instrumental gestures such as “pointing”.
- All the people with ASD have difficulties using expressive gestures.

(Atwood, 1998)
Introduction: Using music for education in ASD

• “We know that most people with autism love listening to music, because that is one of the little information that directly touch the brain that does not need to be decoded, so it's a very easy to digest information for people with autism. ”Theo Peeters
Introduction:
Using music for education in ASD

Several studies have identified music as a good complement to visual supports and as an effective tool for:

- Fostering joint attention (Reitman, M. R., 2005)
- As a reinforcer (Standley, J., 1996)
- Fostering communicative behaviour (Edgerton, C., 1994)
- For developing language, cognitive concepts, motor skills and behaviour in early intervention programmes (Standley, J. M., & J. E. Hughes 1996)
- For augmenting word recognition, icon identification, pictograms related to concepts and pre-verbal skills in early intervention programmes (Register, D., 2001)
- As a facilitator and reinforcer to increase verbal response in children with limited verbal communication (Braithwaite, M., & Sigafoos, J. 1998; Buday, E. M., 1995)
- As a tool for organising and structuring information (Claussen, D., & Thaut, M., 1997)
- For fostering interactions and social relationships (Ulfarsdottir, L., & Erwin, P., 1999)
Participants
A little bit of technology

• First prototype (2006):

Augmented Reality:
"Superimposed Pictograms"

Herrera, Jordan & Gimeno
World Autism Organisation Congress
Cape Town, South Africa 2006

http://autismo.uv.es
# Evolution 2006-2011

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<th>2007-2010</th>
<th>2011</th>
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A little bit of technology

• How kinect works?
Tecnologies within Pictogram Room

What do you need in order to use Pictogram Room?

• Hardware:
  – PC
  – Kinect Sensor
  – VGA Projector / Screen

• Software:
  – Windows 7 Operating System
  – Pictogram Room Installer (FREE) (www.pictograms.org)
Technologies within Pictogram Room
Distribution and space

100-150 cm

KINECT™

TV-PANTALLA-PROYECTOR
Distribution and space
Demostration and Educational Design
Expected Results

• If people with ASD can learn to process body expression from others, then they will gain access to a critical source of information and this may translate into a better body expression of themselves.

• Body expression can be a less aversive mean of communication for some particular cases, as it doesn’t imply eye-contact.

• Body perception and expression together can prepare the individual to respond better and more reciprocally to social cues from others.

• It is a good tool for working together with typically developing peers.

• Game “Hello and Good Bye”
References


• Casas, X; Herrera, G; y col (2012) A KINECT-BASED Augmented reality SYSTEM for individuals with autism spectrum disorders GRAPP 2012