“Being there and then making sense together”

Introducing Cultural Presence in Virtual Archaeology

Laia Pujol-Tost
Pompeu Fabra University
In one LEAP

{LEAP}
{LEarning of Archaeology through Presence}

Call: FP7-PEOPLE-2013-IEF
Grant Agreement n.: PIEF-GA-2012-625537
Scientific Panel: Social Sciences and Humanities
Duration: 2014-2016
By {LEAP]s and bounds (I)

1. Aimed at showing the past but...
2. ...empty!
3. Lack of evaluation

Villa of the Mysteries, Pompeii.
Stanton-Abbot Associates

Forte & Siliotti, 1997
By {LEAP]s and bounds (II)

- Lack of explicit theoretical archaeological framework + of pedagogical goal (instructivist).

**NO universal, objective VA**

<table>
<thead>
<tr>
<th>Culture History</th>
<th>Processualism</th>
<th>Critical Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Architecture</td>
<td>Environment/Landscape</td>
</tr>
<tr>
<td>Focus</td>
<td>Monuments</td>
<td>Economy</td>
</tr>
<tr>
<td>Aim</td>
<td>Visualization</td>
<td>Analysis</td>
</tr>
<tr>
<td>Goal</td>
<td>Description of record</td>
<td>Explanation of record</td>
</tr>
<tr>
<td>User</td>
<td>Sight / awe</td>
<td>Intellect</td>
</tr>
<tr>
<td>Interaction</td>
<td>Navigation</td>
<td>Navigation / manipulation</td>
</tr>
<tr>
<td>Format</td>
<td>Closed model</td>
<td>Metadata</td>
</tr>
</tbody>
</table>

- Implicit belief: objective, enhances learning ← immersive, photorealistic, “interactive” // evaluations show otherwise – e.g. Pujol & Economou 2009).
{LEAP]ing at opportunities

General aim:

To research, implement and evaluate a new conceptual and technological framework, Cultural Presence, aimed at enhancing the understanding of past societies by experts and audiences through the experiencing of immersive, populated, interactive reconstructions of sites.
YOU TAKE
THE BLUE PILL
THE STORY ENDS
YOU WAKE UP IN YOUR BED
AND BELIEVE WHATEVER
YOU WANT TO BELIEVE.

YOU TAKE
THE RED PILL
YOU STAY IN WONDERLAND
AND I SHOW YOU
HOW DEEP THE
RABBIT HOLE GOES.
• Established theoretical & methodological framework(s) for design and evaluation.
• Investigated suitability for learning (e.g. constructivism, embodied interaction).
• Investigated underlying factors.
A {LEAP] into (Cultural) Presence (II)

“The feeling of being there”  
(Heeter, 1992)

“The feeling of being there together”  
(Swinth and Blascovich 2002)

“The feeling of being there making sense together”  
(Riva et al. 2002)
A {LEAP} into (Cultural) Presence (III)

• Why measure Presence?
  • Task performance, training, learning.
  • Communication.
  • Therapy.

• Convergence with CH:
  • 2002: Importance of context (Turner & Turner).
  • 2003: Expand analytical scope (Klimmt & Vorderer).
  • 2005: Understanding other cultures (Jones).
  • 2006, 2013: Sense of place (Turner & Turner)
  • 2010: Social realism in games (Ribbens and Maillet).
  • 2015: Changing bodies changes minds (Maister et al.).
A {LEAP} into (Cultural) Presence (IV)

Palenque (2006)

Uruk Project (2011)

Okapi Island (2009)

VM of the Tiber Valley (2012)

(Greeff and Lalioti 2001)

(Devine 2007, 2013)
{LEAP]ing at opportunities

General aim:

To research, implement and evaluate a new conceptual and technological framework, Cultural Presence, aimed at enhancing the understanding of past societies by experts and audiences through the experiencing of immersive, populated, interactive reconstructions of sites.
2014-2016: {LEAP}ing around

Development

1. Research
   - Import and expand the concept of CP
   - Research on classical concept of P
   - Theory of (Mosaic) Culture
   - What defines archaeological cultures
   - Consultations with LEAP User Group
   - How to depict it (defining "Cultural Presence")

2. Implementation
   - Build a VR-mediated experience of Çatalhöyük (540)
   - 5 POIs
   - 3 versions: empty, objects, people, scenes, env.
   - navigation

3. Evaluation
   - Operational definition of CP: "To be effective in translating the subjective experience of being an area of learning more about or feeling therapeutically immersed in past belief systems (Pujo & Changian 2007)
   - P is a means and a measure

4. Dissemination

   - Focus on outcomes of current models
   - More CP = More learning
   - Compare learning, engagement, understanding across different versions and contain with P
2014 was a {LEAP] year!

CP=“The feeling of being there and then” (Champion 2005)

CP=“The subjective experience of feeling one is aware of, learning more about, or thematically immersed in past/other believe systems” (Pujol & Champion 2007 / 2012)

→ Exploration + Social exchange + Interpretation (Constructivism)

CP=“The feeling of being there and then making sense together” (Pujol 2018)

CP is a means, not an end!
2014-2016: \{LEAP\}ing around

1. Research
   - Import and expand the concept of CP:
     - Research on classical concept of P.
     - Theory of (Material) Culture.
   - What defines archaeological cultures? (consultations with LEAP User Group).
   - How to depict it (defining “Czestochowska”?)

2. Implementation
   - Build a VR-mediated experience of Czestochowa (B4H):
     - 5 POIs
     - 3 versions: empty, objects, people, scenes, environment

3. Evaluation
   - Operational definition of CP: Time for evaluating the subjective experience of being part of an engaged, appreciative, or learning more about or feeling therapeutically immersed in past belief systems (Pull & Changpan 2007)
   - P is a means and a measure

4. Dissemination
   - Focus on outcomes of current models
   - More CP = More learning
   - Compare learning, engagement, understanding across different versions and contain with P
2015 was a {LEAP] year! (I)

Defining “çatalhöyükness”

Subjective approach

Objective approach

(Pujol 2017a)
2015 was a {LEAP} year! (II)
2014-2016: {LEAP]ing around

Development

1. Research
- Import and expand the concept of CP
- Research on classical concept of P
- Theory of (Material) Culture
- What defines archaeological cultures?
- Consultations with LEAP User Group
- How to depict it (defining "Czechoslovakian")

2. Implementation
- Build a VR-mediated experience of Czechoslovak (1940s)
- 5 POIs
- 3 versions: empty, objects, people, scenery, environments

3. Evaluation
- Operational definition of CP: Time for exploring the subjective experience of being/pace is awareness, appreciation of learning more about or feeling therapeutically immersed in past beliefs systems (Fujita & Changian 2007)
- P is a means and a measure
- Focus on outcomes of current models
- More CP = More Learning
- Compare learning, engagement, understanding across different versions and contain with P

4. Dissemination
2016 was a {LEAP] year! (I)

• To explore which factors are specifically related with the sense of CP:
  → H: 1) cultural variables fundamental; 2) closely linked to social aspects; and 3) more important than visual realism.
  → help design suitable VLEs by modifying its different factors.

• To see if there is a correlation between CP and learning:
  → “H= The higher CP, the higher L” (Mikropoulos & Strouboulis 2004; Bonini 2008, Witmer and Singer 1998).
  → P may be a good predictor of learning potential.
2016 was a {LEAP} year! (II)

- Between-subjects experimental design.
- “Mobile” location.
- 85 participants:
  - 47% male and 53% female.
  - 12-80 years old.
  - Diverse backgrounds.
  - Different levels of experience with technology and Cultural Heritage.
- Explored ÇH3D while being recorded, and filled in two questionnaires.
The {LEAP] forward (I)

(Empirical results & guidelines)

- **EFAs** → the concept of CP is sound and composed by three main factors:
  1. Plausibility of the VE + Distinctive cultural elements.

*(Perceptual aspects are mobile)*

- **Correlation** analyses & $X^2$ → positive but not linear relation between learning and CP (Learning = compromise between richness in content, affordances for exploration, and narrative explanations).

- **ANOVAS** → virtual reconstructions are NOT a universal tool. User factors:
  1. Suspension of disbelief.
  2. Expertise in related fields.
  3. Experience with computer games.
  4. Experience with IVR.

![Pattern matrix](image)

(Pujol 2018)
Cultural Presence Questionnaire (CPQ), built and pilot-tested (4) after an exhaustive review of Presence assessment tools (e.g. Slater, Useoh, Steed, 1994; Witmer & Singer 1998)

Subscales related to:
- General feeling of Cultural Presence
- Perception
- Self-perception
- World’s behavior
- Interaction
- Attention
- Willingness to experience Presence
- Emotions
- Characters
- Culture
- Detailed questions about learning.

(Pujol forthcoming)
The {LEAP} forward (III)

- “3D·CoD”: Design Method for VR-Mediated Experiences in Virtual Archaeology (based on Participatory Design strategies).

(Pujol 2017b)
{LEAP}ing out...


{LEAP]ing for joy!

• More info:
  • https://www.facebook.com/theleapproject/
  • @TheLEAPproject
  • www.upf.edu/leap

• Laia.Pujol@upf.edu

The research leading to these results has received funding from the EU's Seventh Framework Programme (Marie Curie Actions, n. 625537).
“Being there and then making sense together”

Introducing Cultural Presence in Virtual Archaeology

Laia Pujol-Tost

Pompeu Fabra University