SITUATED LEARNING AND TRANSFER

- Engagement and Identity
  Students are motivated to do well, see the relevance of their learning, and increase in self-efficacy

- Evocation and Transfer
  Immersive interfaces can evoke a wide spectrum of authentic performances with embedded support

- Evidence for Improvement and Assessment
  Log files, chat logs, shared notebooks, and similar artifacts provide a rich evidentiary trail
IMMERSION
CONTINUUM OF IMMERSIVE MEDIA

REAL ENVIRONMENT

Tangible User Interfaces (TUI)
A TUI uses real physical objects to both represent and interact with computer-generated information (Ishii & Ulmer, 2001).

Spatial AR
Spatial AR displays project computer-generated information directly into a user’s environment (Bimber & Raskar, 2005).

‘See-through’ AR (either optical or video)
A user wears a head-mounted display, through which they can see the real world with computer-generated information superimposed on top (Cakmakci, Ha & Rolland, 2005; Billinghurst, Grasset & Looser, 2005).

Virtual Reality (VR)
VR refers to completely computer-generated environments (Ni, Schmidt, Staat, Livingston, Ball, & May, 2006; Burdea & Coiffet, 2003).

Mixed Reality (MR)

Augmented Reality (AR)

Projection Augmented models (PA models) are a type of Spatial AR display, and are closely related to TUIs.

Augmented Virtuality (AV)
AV ‘adds’ real information to a computer-generated environment (Regenbrecht, et al. 2004).

Semi-immersive VR
A semi-immersive VR display fills a limited area of a user’s field-of-view.

Immersive VR
Immersive VR, which uses either a head-mounted-display or a projection-based system, completely fills the user’s field-of-view.

VIRTUAL ENVIRONMENT

Using physical objects to create a virtual model (Ichida, Itoh, & Kitamur, 2004). As a user adds a physical ‘ActiveCube’ to the construction, the equivalent virtual model is automatically updated.

The ‘Bubble Cosmos’ – ‘Emerging Technology’ at SIGGRAPH06. The paths of the smoke-filled bubbles are tracked, and an image is projected into them as they rise.

See-through AR: the butterfly is computer-generated, and everything else is real (Fischer, Bartz & Straßer, 2006; Kölsch, Bane, Höllerer, & Turk, 2006).

Semi-immersive VR using the Barco Baron workbench (Drettakis, Roussou, Tsingos, Reche & Gallo, 2004).

Projection-based immersive VR. The users are fully immersed in the ‘CAVE’ (FakeSpace, 2006; Cruz-Neira, Sandin & DeFanti, 1993).
COURSE DESCRIPTION

BEGINNING FRENCH II: EXPLORING PARISIAN LIFE & IDENTITY
BEGINNING FRENCH II CURRICULUM
COURSE THEMES

• **What does it mean to be Parisian?**
  • Exploration of stereotypes of Parisians
  • Discussions of the diversity of Paris

• Lodging and housing in Paris

• **Quarters of Paris**
  • Marais, Montmartre, Latin Quarter, Belleville, Goutte d’Or, 11e/la République

• Les Beaux-Arts:
  Music: Harlem Musicians in Montmartre / Fête de la Musique in Paris
  Theater: Comédie Française (*Le Malade Imaginaire*)
  Art: Surrealism and modern art at the Centre Pompidou / Graffiti in Paris

• Media: Representations of Paris in Media
SIMULATION OF LIFE IN PARIS
The vision of the person language learners would like to become as foreign language users is one of the most reliable predictors of their long-term intended effort and one of the strongest motivational forces in language learning (Dörnyei & Kubanyiova, 2014).
RATIONALE: WHY VR IN THE TEACHING OF LANGUAGE AND CULTURE?
VISION & MENTAL SIMULATIONS

- Mental simulations...
  - help us **envision steps** toward achieving [language learning] goals (Ryan & Irie, 2014)
  - “outline a **rich and textual picture** of what success looks like and feels like” and are “so **vivid** as to enable the listener or reader to **transport himself ... to witness it and experience it**” (Levin, 2000, 95)
  - provide an **extra sensory element** containing **tangible images** related to achieving the goal that enhances **motivation**
  - allow us to **“experience” the action** and feel **emotionally involved**
  - allow us to predict how we may behave in certain situations, where we may succeed and where we may fail

- **L2 Motivational Self-System** (Dörnyei, 2009)
  - Ideal L2 self
  - Ought-to L2 self
  - L2 Learning experience
### Rationale for this project

<table>
<thead>
<tr>
<th>20th Century Modernist Perspectives on Culture</th>
<th>21st Century Post-Modernist Perspectives on Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fixed Cultural products, practices, and perspectives</td>
<td>- Multi-faceted</td>
</tr>
<tr>
<td>- Fixed boundaries</td>
<td>- Culture as discourse</td>
</tr>
<tr>
<td>- Regional, national, or ideological borders</td>
<td>- Fluid boundaries</td>
</tr>
<tr>
<td>- Comparisons of Culture A to Culture B</td>
<td>- Notions of plurality</td>
</tr>
<tr>
<td>- Dichotomous</td>
<td>- Contextual, circumstantial, and unpredictable</td>
</tr>
<tr>
<td>- Set rules of behavior and cultural practices</td>
<td>- Contradictory and dynamic</td>
</tr>
<tr>
<td>- Prioritization of authentic “native speaker”</td>
<td>- Multimodal and multilingual</td>
</tr>
<tr>
<td>- Intercultural Competence</td>
<td>- Cultural mobility</td>
</tr>
<tr>
<td></td>
<td>- Transcultural competence</td>
</tr>
</tbody>
</table>

*Source: Adapted from Kramsch 2015*
DEVELOPMENT OF LA RÉPUBLIQUE
PARIS VR NARRATIVES
Casted and hired four different Parisians from the same quarter (La République) to document and share the stories of their lives with a VR camera over the course of two months.

In collaboration with:

Rus Gant (Visualization Lab, Harvard)
Wonda VR (VR editing software company, Paris)
Chris Dede (Graduate School of Education, Harvard)
# INTERVIEWS WITH POSSIBLE PARTICIPANTS
| 11E ARRONDISSEMENT / LA PLACE DE LA RÉPUBLIQUE |

<table>
<thead>
<tr>
<th>NAME</th>
<th>AGE</th>
<th>OCCUPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benoît</td>
<td>25</td>
<td>Magician/songwriter/actor</td>
</tr>
<tr>
<td>Clara</td>
<td>27</td>
<td>Actress</td>
</tr>
<tr>
<td>Müller</td>
<td>23</td>
<td>Comédienne</td>
</tr>
<tr>
<td>Antoine</td>
<td>22</td>
<td>Bartender</td>
</tr>
<tr>
<td>Youssef</td>
<td>33</td>
<td>Filmmaker &amp; screenwriter</td>
</tr>
<tr>
<td>Marie-Claire</td>
<td>45</td>
<td>Teacher (Kindergarten)</td>
</tr>
<tr>
<td>Lee</td>
<td>11</td>
<td>Middle school Student</td>
</tr>
<tr>
<td>Shérazade</td>
<td>29</td>
<td>Production Manager</td>
</tr>
<tr>
<td>Sylvie</td>
<td>60</td>
<td>Shop Owner (Wool)</td>
</tr>
</tbody>
</table>
AUDE

- **Age:** 23
- lives in 11e (Oberkampf)
- works as a server at the Champs Elysées (touristy area)
- Studied theater at university
- babysits 3 1/2 year old girl
- family lives in the suburbs
- lives in a studio alone
- mother is English, father is French
- Talkative, friendly, outgoing
BENOÎT

- Age: 25
- Magician/actor/singer-songwriter
- Tour guide of "hidden Paris"
- Born in La Réunion
- Father is Spanish, mother is French
- Family now lives in Pyrenees - a town with 30 people
- Creative, social, free-spirited
YOUSSEF

- Age: 33
- filmmaker
- from Tunisia
- spends 2-3 months in Tunisia every year
- Came to France at age of 17 to study film
- lives with girlfriend
- loves the music scene in 11e
LEE

- Age: 11
- Native Parisian
- Family of four (younger brother)
- Interests: magic, tennis, biking,
- Curious, engaging, intelligent
FORMATION VR/VR TRAINING

Camera Kit
Use of the Camera (tripod, movement, camera height, etc.)
Use of VR headset

Downloading/uploading
Dropbox folder
Weekly updates
Weekly feedback
FORMATION VR/VR TRAINING
• Create four Parisian VR stories from four different Parisian perspectives
  How do four different Parisians who live in the same quarter experience the same space?

• Target Cultural products and cultural practices → Cultural perspectives
  (via voice-over/narration)

• Target post-modernist approaches to teaching culture → multiplicity of perspective, notions of plurality, etc. (Kramsch, 2015)

• Create VR experiences that allow students envision and experience Paris through extra sensory elements that make them feel emotionally involved (Ryan & Irie, 2014)

• Exposure to Authentic Language use: transcribed voice-over narration / gaze prompted narration / Interactive elements
## STRUCTURE OF LA RÉPUBLIQUE

<table>
<thead>
<tr>
<th>Welcome</th>
<th>Brief Description</th>
<th>Introduction</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view" alt="Welcome Image" /></td>
<td><img src="https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view" alt="Brief Description Image" /></td>
<td><img src="https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view" alt="Introduction Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agenda</th>
<th>Conclusion</th>
<th>Titles</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view" alt="Agenda Image" /></td>
<td><img src="https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view" alt="Conclusion Image" /></td>
<td><img src="https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view" alt="Titles Image" /></td>
</tr>
</tbody>
</table>

[https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view](https://drive.google.com/file/d/1KtNjpNPBRLzvxbq-cbn2VYD51kJZc-Q8I/view)
VOICE-OVER NARRATION

https://player.wondavr.com/p/a441bc65-0755-4842-9083-757071170627#Youssef__Chez_Lanzani_decors_cinema_1
Le grand garçon que tu vois, c'est mon meilleur pote ensemble on fait du sport, on peure comme des enfants devant les films d'amour, on boit des cafés interminables en refaisant le monde, on écrit des scénarios catastrophiques, on fait des bras de fer, bref j'en passe. Peu importe où je suis, il ne sera jamais très loin.
INTERMITTENT SUBTITLES

https://player.wondavr.com/p/a441bc65-0755-4842-9083-757071170627#Lee__Un_tour_en_voiture_avec_ma_grandmere
INTERACTIVE FEATURES

BIENVENUE CHEZ BENOÎT, 20H
REGARDEZ-AUTOUR POUR
INTERAGIR AVEC SON APPARTEMENT

https://player.wondavr.com/p/a441bc65-0755-4842-9083-757071170627#Benoit_Bienvenue_chez_Benoit
PROCEDURE

• Four days

• Three people, three days
  • Immersion in the life of one character per day

• Final day: Synthesis
  • Comparing the lives and experiences of the three people.
  • What does it mean to be Parisian?
**PROCEDURE**

**Introduction** (theme, etc.)

**Pre-viewing phase**
- Make predictions, make hypotheses about content, activate students’ prior knowledge and schemata about themes/content in VR clip

**Immersive Viewing phase I** (20 minutes)
- Complete immersion in VR with targeted reflection questions
- Partner discussion → Large group discussion

**Focused viewing II**
- Re-watch selected segments in VR with targeted comprehension questions
- Data collection phase
- Partner discussion → Large group discussion

**Discussion and Analysis**
- Analyze using the collected “data” from the focused viewing
- Questions with prompts
- Vocabulary boxes to guide the discussion and help students articulate ideas
- Partner discussion → Large group discussion

*Inspired by Barnes-Karol & Broner (2010)*
*Using Images as Springboards to Teach Cultural Perspectives in light of the Ideals of the MLA Report (Modern Language Journal)*
PROCEDURE
Recall that Vision and Mental simulations...

- help us **envision steps** toward achieving [language learning] goals (Ryan & Irie, 2014)
- provide an **extra sensory element** containing tangible images related to achieving the goal that enhances **motivation**
- allow us to **experience** the action and feel **emotionally involved**
**PRELIMINARY PILOT STUDY FINDINGS (SPRING 2018, N=55)**

**WHAT ASPECTS OF THE VR IN CLASS DID YOU FIND VALUABLE?**

<table>
<thead>
<tr>
<th>Seeing/visualizing (16)</th>
<th>Sensations/ Feelings ... (15)</th>
<th>Cultural Immersion and Experience (15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>... help us <strong>envision</strong> steps toward achieving [language learning] goals</td>
<td><strong>... provide an extra sensory element</strong></td>
<td><strong>... allow us to “experience” the action</strong></td>
</tr>
<tr>
<td>... help us envision steps toward achieving [language learning] goals</td>
<td><strong>... provide an extra sensory element</strong></td>
<td><strong>... allow us to “experience” the action</strong></td>
</tr>
<tr>
<td><strong>Seeing/visualizing</strong> (16)</td>
<td><strong>Sensations/ Feelings ... (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
</tr>
<tr>
<td>... closely; ... others lives’ in a new way; ... Sites of city in real time ... Lives of Parisians; ... average apartment helped me visualize living in Paris ... what life is like in Paris in a very real manner; ... people in their real lives ... daily life of real people; ... a full picture was a valuable experience ... what life is like for them first hand; ... journey on the metro ... envisioned the quotidian aspect of life in Paris and travelling in the city</td>
<td><strong>Sensations/ Feelings ... (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
</tr>
<tr>
<td><strong>Sensations/ Feelings ... (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
</tr>
<tr>
<td>... closely; ... others lives’ in a new way; ... Sites of city in real time ... Lives of Parisians; ... average apartment helped me visualize living in Paris ... what life is like in Paris in a very real manner; ... people in their real lives ... daily life of real people; ... a full picture was a valuable experience ... what life is like for them first hand; ... journey on the metro ... envisioned the quotidian aspect of life in Paris and travelling in the city</td>
<td><strong>Sensations/ Feelings ... (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
</tr>
<tr>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
</tr>
<tr>
<td>Ability to view first hand - Fully immersed in the Parisian weekly life</td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
<td><strong>Cultural Immersion and Experience (15)</strong></td>
</tr>
</tbody>
</table>
SPRING 2019 PRELIMINARY FINDINGS (N=35)

Key to Scale Questions:
Vis1 - My image of myself taking transportation in Paris is vivid.
Vis2 - I find it easy to imagine what it would be like to live in a Parisian apartment.
Vis3 - It is easy for me to imagine how I would participate in Parisian life.
Vis4 - My image of myself living in Paris is vivid.
Vis5 - I can visualize myself participating in social contexts in Paris.

Table 2
Comparisons of Pre- and Post-test Scores for Vision Scale Variables: Spring 2019 (n=35)

<table>
<thead>
<tr>
<th>Vision</th>
<th>Pretest Mean (SD)</th>
<th>Posttest Mean (SD)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vision 1</td>
<td>Vision 2</td>
<td>Vision 3</td>
</tr>
<tr>
<td></td>
<td>4.51 (2.05)</td>
<td>4.29 (1.41)</td>
<td>4.06 (1.37)</td>
</tr>
<tr>
<td></td>
<td>5.74 (1.36)</td>
<td>5.83 (0.82)</td>
<td>5.37 (1.11)</td>
</tr>
</tbody>
</table>

Note. All scales variables were based on 7-point scales.
SPRING 2019 PRELIMINARY FINDINGS (N=35)

Key to Scale Questions:

Id1 - I can imagine myself at a party in Paris.
Id2 - I can imagine myself at a family gathering with Parisians in Paris.
Id3 - I can imagine myself at a café in Paris with Parisians.
Id4 - I can imagine myself in social settings with Parisians.
Id5 - I can imagine myself having an (evening drink) with Parisians in Paris.

<table>
<thead>
<tr>
<th></th>
<th>Ideal 1</th>
<th>Ideal 2</th>
<th>Ideal 3</th>
<th>Ideal 4</th>
<th>Ideal 5</th>
<th>Aggregated Ideal Self</th>
<th>Value in VR Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest Mean (SD)</td>
<td>4.17 (1.79)</td>
<td>3.66 (1.47)</td>
<td>5.4 (1.61)</td>
<td>4.54 (1.63)</td>
<td>4.54 (1.72)</td>
<td>4.46 (1.38)</td>
<td>n/a</td>
</tr>
<tr>
<td>Posttest Mean (SD)</td>
<td>5.83 (0.92)</td>
<td>5.54 (1.12)</td>
<td>6.2 (0.83)</td>
<td>5.77 (0.84)</td>
<td>5.77 (0.94)</td>
<td>5.82 (0.73)</td>
<td>6.03 (1.22)</td>
</tr>
<tr>
<td>p-value</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.01</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note. All scales variables were based on 7-point scales.
PRELIMINARY FINDINGS – PRE TO POST (SPRING 2018, N=55)
WHAT DOES IT MEAN TO BE PARISIAN?

<table>
<thead>
<tr>
<th>Shift (to complexity/ambiguity): 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Change But... : 8</td>
</tr>
<tr>
<td>Diverse from Start aka Already Ambiguous: 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-Products: 56</th>
<th>Post-Products: 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Practices: 22</td>
<td>Post-Practices: 54</td>
</tr>
<tr>
<td>Pre-Perspectives: 56</td>
<td>Post-Perspectives: 24</td>
</tr>
</tbody>
</table>

**Products** of Parisian culture (i.e., buildings, architecture, theater, food, etc.);
**Practices** (social interactions, behaviors, etc.);
**Perspectives** (the attitudes, values, beliefs, and worldview)
FUTURE DIRECTIONS

- Continue to develop the project, add more Parisian narratives?
  - Adaptation to other cultural contexts?
- Wonda VR learning space: Access to a database of VR experiences
- Use of VR experiences available online (news sources – i.e., Guardian, etc.)
  - More evaluation…
International scholars, policy specialists and entrepreneurs convened at the three-day workshop to design a roadmap that will use virtual reality (VR) to improve immersive learning.


Through virtual reality, students can…
- Change the way they experience material
- Create their own pathways
- Engage with experiences
- Ease transfer of knowledge
- Gain a deeper understanding
- Walk into someone else’s shoes
**Implicit Learning through embodiment** in immersive reality

- **Implicit racial bias decreases** – reaction time tests, behavior
- **Implicit learning** – you mimic the other person more if you are in the same color body
- Changes in **perception, attitude, and behavior**

**Complex information** is learned through virtual experiences, beyond what is possible in reality

- This **implicit learning is persistent** – it lasts (Slater, 2017)

- Immersive virtual reality can allow for **transformed social interactions** (Bailenson, 2006; Kraemer, 2017)

- Allows us to **simulate realistic scenarios** that allow learners to practice skills and interact (Shute, 2017)
DIVERSIFICATION OF PARISIAN CULTURE /
“MULTIPLICITY OF PERSPECTIVES”
“LA FÊTE” (PARTY)
DIVERSIFICATION OF PARISIAN CULTURE
“L’APÉRO”

Youssef

Aude

Lee (goûter)

Benoît
DIVERSIFICATION OF PARISIAN CULTURE
“L’APPARTEMENT”
DIVERSIFICATION OF PARISIAN CULTURE
“LES MOYENS DE TRANSPORT”
DIVERSIFICATION OF PARISIAN CULTURE
“LE PETIT-DÉJEUNER”

Youssef

Aude