



Using Virtual Reality and Google Cardboard to Enhance Cultural Awareness

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Overview

Part I Background and theoretical frameworks

Part II The study

Part III Preliminary findings and future directions

The technology: VR and Google Cardboard

Most scholarship frequently refers to **virtual reality (VR)** as “*anything that is not part of the real world*”, e.g. video games, texts, virtual learning environments, 360° videos, etc.

Commercial markets and conventional terminology specifically refers to VR as using head-mounted hardware to visually ‘immerse’ the user in a virtual environment.



The technology: VR and Google Cardboard

In our study, we use the commercial definition of VR to frame our thoughts on VR meaning **we are using a headset to immerse learners in 3D and 360° environments.**

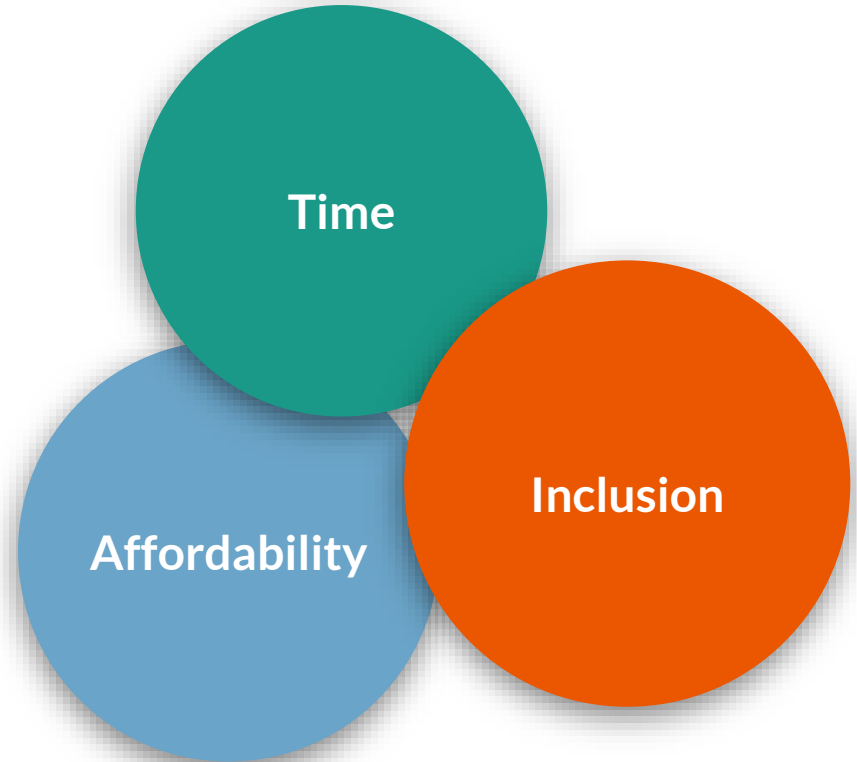
Google Cardboard is an affordable viewer that can be used with compatible smartphone applications (such as *YouTube*) to explore VR environments.





Google Cardboard

- \$15, sold online and in stores
- Simple set up, can be done on location
- Various smartphone brands and sizes can be used





Theoretical Frameworks

Cultural Awareness and
Intercultural Competence

Virtual Reality

Immersion

Experiential Learning Theory



Cultural awareness

The introduction of the Standards Movement in the 1990s influenced the role of culture in language education motivating instructors to include culture in the language curriculum.

Despite positive attitudes towards cultural pedagogy, **in language textbooks the target culture is frequently presented in a static manner without giving opportunities to explore and engage with the many dimensions of that culture** (McConachy & Hata, 2013).



Defining “cultural awareness”

- Awareness of one’s own culturally-induced behavior
- Awareness of the culturally-induced behavior of others
- Ability to explain one’s own cultural standpoint

(Tomalin & Stempleski, 1993)



Defining “cultural awareness”

- Ability to evaluate critically and on the basis of explicit criteria, perspectives, practices and products in our own and other cultures and countries.

(Byram, 1997)



Defining “cultural awareness”

Drawing upon previous definitions (i.e., Lado, 1971; Byram, 2007; Schulz, 2007)

“the ability to acknowledge the target culture as a shared and dynamic feature of a country, and the capability to recognize and evaluate specific characteristics, generalizations, and stereotypes of such culture”



Kolb - Experiential Learning Theory

→ “Learning is best conceived as a process...grounded in experience...[that] requires the resolution of conflicts between dialectically opposed modes of adaptation to the world”

(Kolb, 1984)



Immersion

- Kolb (1984) also describes learning as “...transactions between the person and the environment.”
- Immersion, from a language learning perspective, is interpreted as virtually surrounding a user in ...“images, sound, or other stimuli that provide an engrossing total environment.”
(wikipedia in Blyth 2018)



The economy of VR

VR can then be a vehicle for immersion and experiential learning theory

“Virtual reality allows educators to bring the outside world into the classroom, allowing students to become immersed in virtual environments.” (LLoyd et al, 2017)



Part II

The Study

Research Questions

Participants and Instruments

Data Collection

Results



Research questions

(1) What is the attitude of students towards the implementation of VR and Google Cardboard in the language classroom?

(2) How does the use of VR videos representing everyday environments impact students' awareness of the target culture?***

Participants and instruments

- 19 undergraduate students enrolled in beginner Italian courses (101) at a large university in the United States
- Three 360° VR videos recorded in Italy by one of the researchers representing everyday Italian environments (a restaurant, a townsquare, a street)
- Google Cardboard and the YouTube app
- Headphones



VR Videos

https://www.youtube.com/watch?v=uAdcw_qoR8g&t

Street

<https://www.youtube.com/watch?v=mwfvIKpN7ms>

Townsquare

<https://www.youtube.com/watch?v=ZPxw0pt8l0A>

Restaurant





Data collection

a. Pre-survey → previous experience with VR and attitudes toward technology in the language classroom

b. Written reflections:

1. First reflection before viewing the video

→ *Viewing*

2. Second reflection about what was seen/heard/experienced

→ Asked to focus on particular aspects

→ *Viewing*

3. Third reflection about the particular/specific aspects



Data collection

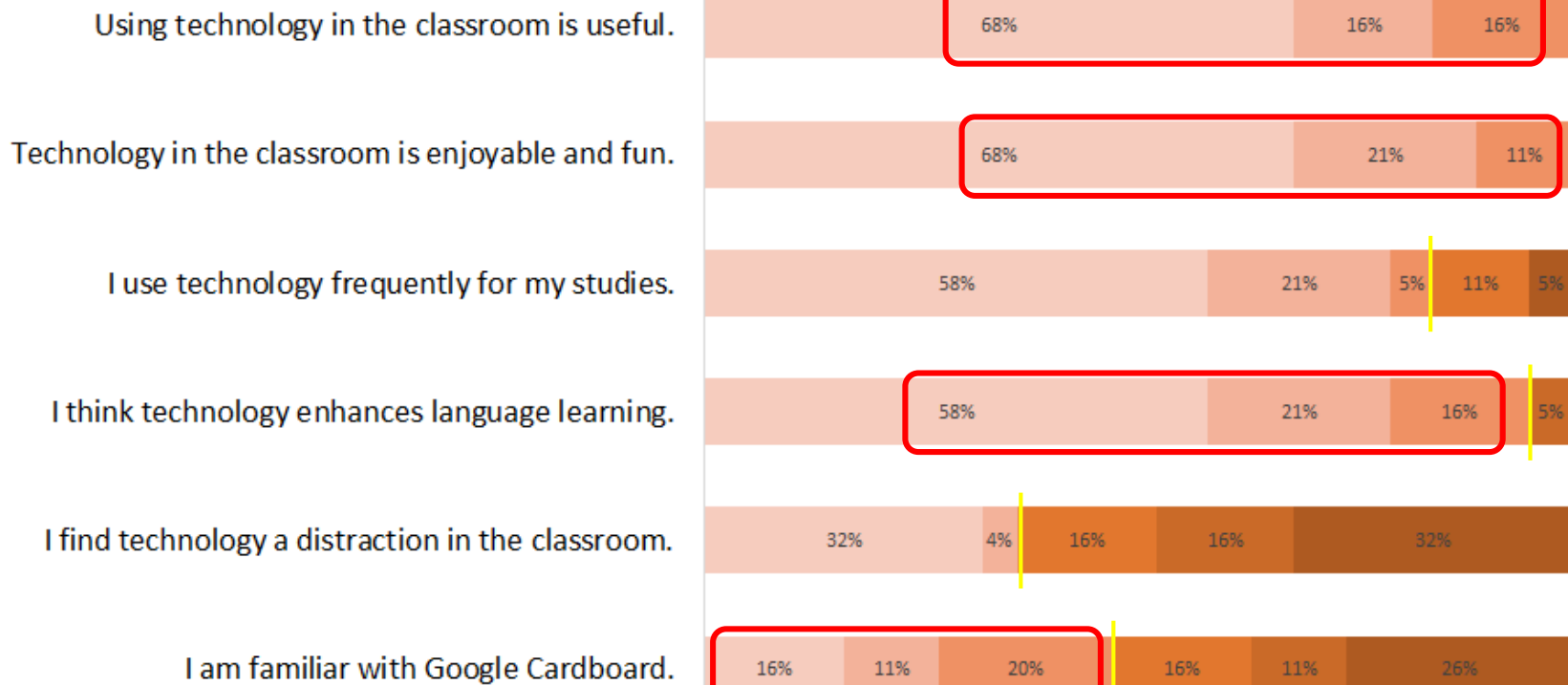
- c. Post-survey → positive and negative aspects of using VR (*how does it compare to the traditional printed textbook? How does it compare to the real experience of being in Italy?*)
- d. 10-minute focus group interview



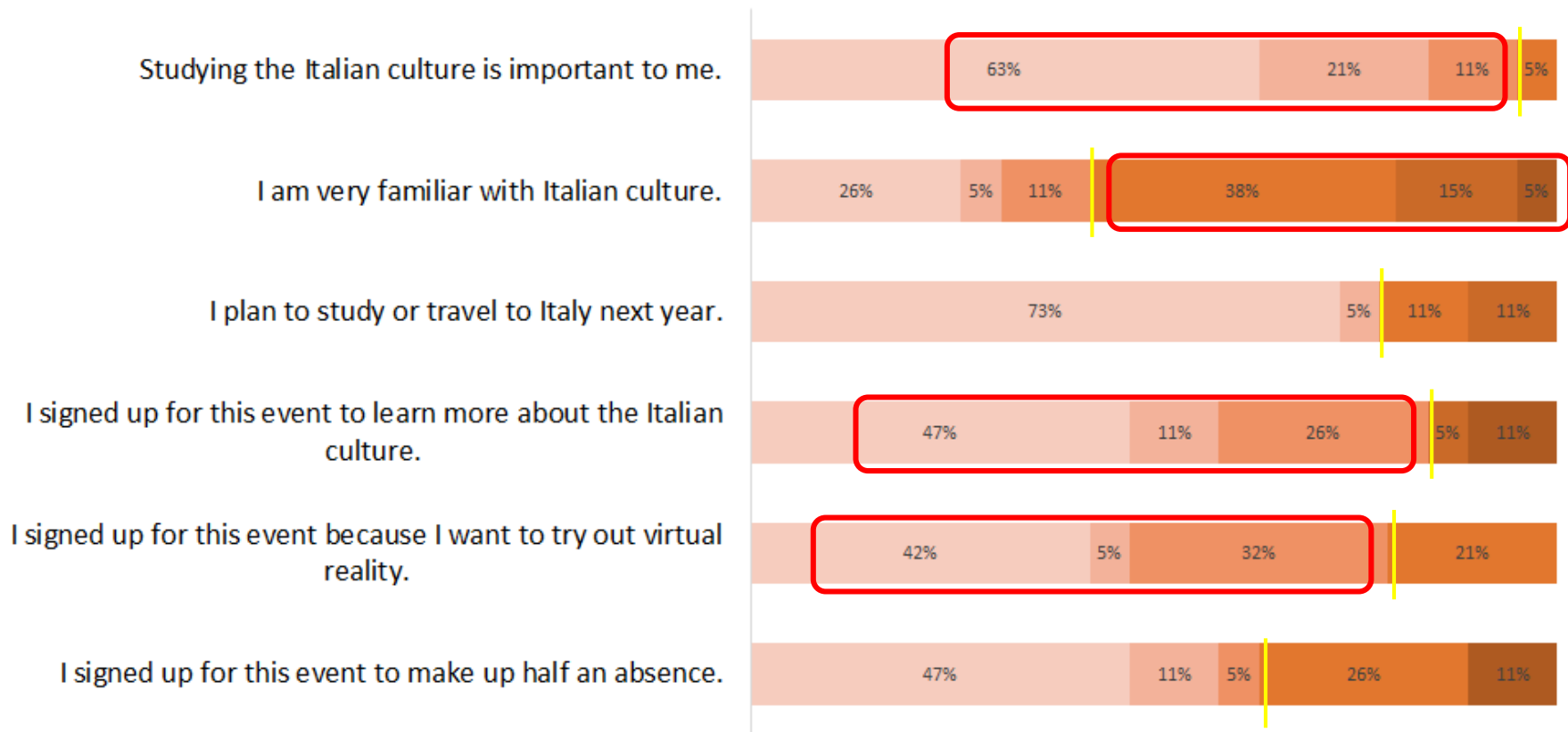
Results: Pre-survey

	Yes	No
Have you been to Italy before?	6	13
Have you used VR before?	7	12

Strongly agree Agree Slightly agree Slightly disagree Disagree Strongly disagree



Strongly agree Agree Slightly agree Slightly disagree Disagree Strongly disagree



1. I think I'm gonna see Italian people, merchants, tourists, vendors, architecture, and overall beautiful scenery.

3. I noticed more of the transportation, and it was surprising to see that the public buses were Mercedes. I also noticed the brick streets and more of the architecture, as it is very close together.

2. I liked it with the headphones, it was very immersive. I felt like I was actually in Italy standing on the corner. I enjoyed the experience.



Video of a street

1. What participants **expected to see**

2. What participants **noticed** during the first viewing

3. Participants were asked to **focus on specific aspects** of the video during the second viewing



Results: Post-survey

If you have been to Italy before, how does the VR experience compare to the real experience?

- “I have been to Italy, it seemed nothing like it. Italy was much busier and more exciting.”
- “I believe it is similar but nothing compares to being to Italy in person.”
- “Not even close, a lot of Italy is about the tastes. Plus, there’s so much beauty in Italy and I’m not sure if VR videos can do all of them justice.”



Results: Post-survey

*How does the VR experience compare with classroom experiences you have had, for example learning with a **textbook** or from a **teacher-led presentation**?*

- “I would like this better than the textbook.”
- “Not applicable since very little human interaction.”
- “The VR gives a visual representation of Italy that can only be seen using technology. A book can't show you Italy like VR can.”
- “VR is cool because it gives learning a more hands on experience.”
- “The VR experience captured my attention more.”

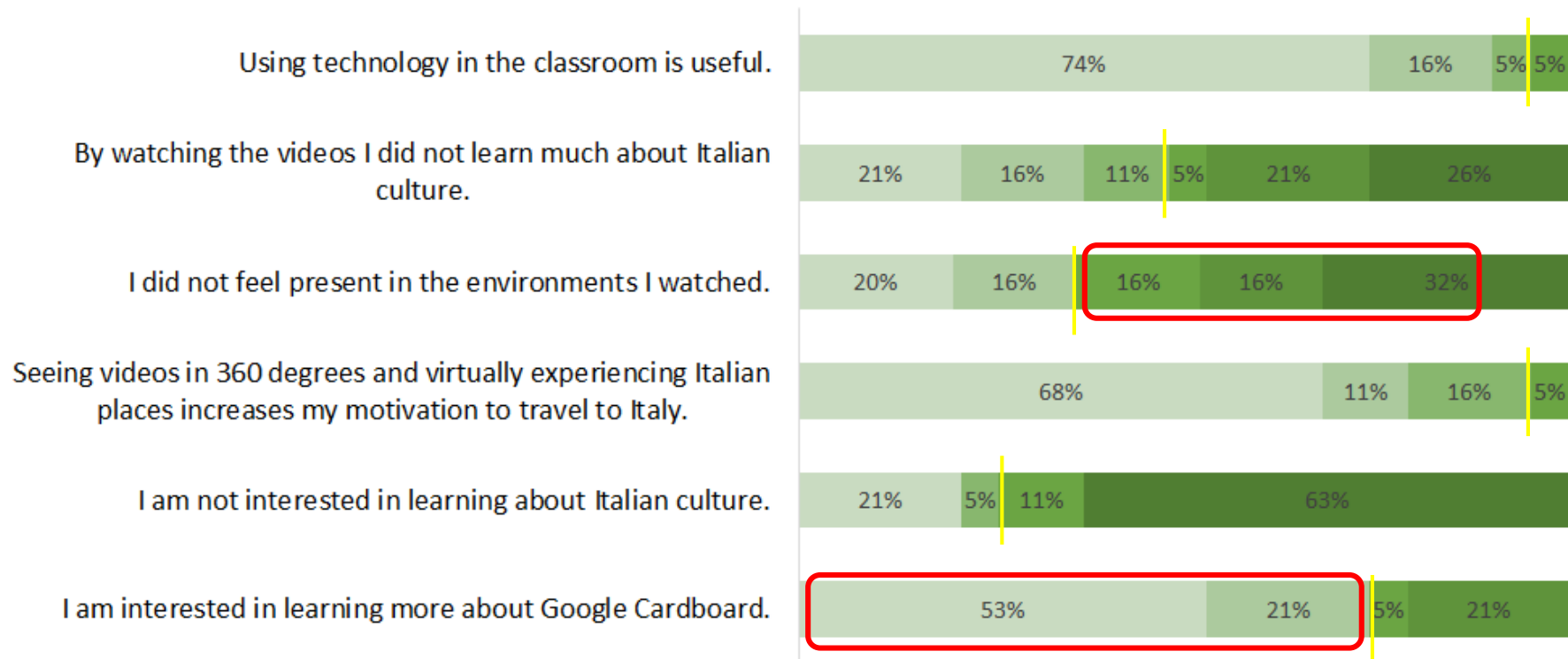


Results: Post-survey

What are your concerns about using VR in the classroom?

- “Dizziness if used for more than 5 minutes straight.”
- “Not enough interaction, but that will obviously come with further technological advancements.”
- “Getting caught up in the idea of using technology and not really retaining any knowledge.”
- “None. It’s wonderful and should be implemented into classroom lessons.”

■ Strongly agree
 ■ Agree
 ■ Slightly agree
 ■ Slightly disagree
 ■ Disagree
 ■ Strongly disagree

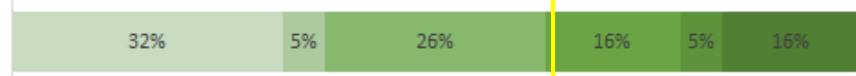


■ Strongly agree
 ■ Agree
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 ■ Disagree
 ■ Strongly disagree

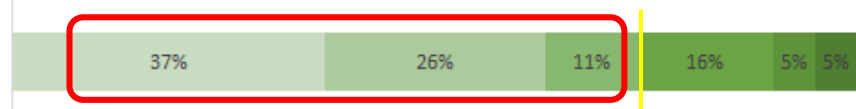
The VR experience was useful to understand more about Italy.



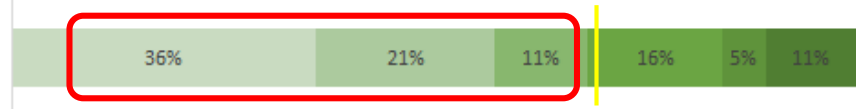
The VR experience was more fun than educational for me.



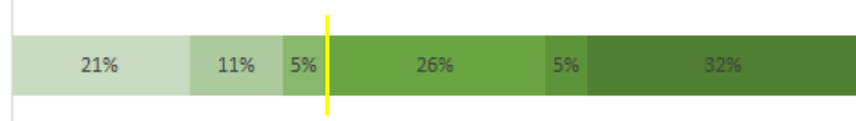
I would like to regularly use VR in my Italian class to learn about Italy.



I prefer learning about the Italian culture through immersive VR videos instead of printed images in the textbook.



I would prefer to learn more about these places from a book or film, not in a 360 immersive way.



I think VR could also be used in other classes that I am taking.





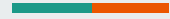
Focus group interview highlights

What aspects seemed most memorable or important to you?

- “I liked how people interacted with the environment. One of the reasons of learning Italian for me is that I don't want to stand like a tourist, but I would like to know kind of roughly how people act in the streets.”

What makes VR better than a picture in the textbook?

- “The sounds, it’s easier to believe a video.”
- “With a picture you’re just stuck on one thing specifically, with this you can move around.”



Part III

Conclusions

Preliminary Findings

Future Directions



Preliminary findings: **technology and culture**

- The majority of the participants reported that technology in the classroom is useful and can enhance language learning (**58%**).
- Half of the participants reported to be unfamiliar with Google Cardboard and **63%** have not used VR before. **Those who have used VR before did it for fun, and not for educational purposes.**
- **74%** of the participants are interested in learning more about Google Cardboard.



Preliminary findings: VR vs the real experience

- The participants who have been to Italy explained that the VR experience is not close to the real experience
 - Low quality videos and devices
 - Inability to interact with the environment
 - VR is realistic but *not real*
- **68%** have never been to Italy → VR is an opportunity to experience the target culture and immersive environments **otherwise inaccessible**



Preliminary findings: VR vs the textbook

- Participants (68%) prefer VR to the traditional textbook because
 - Captures their attention more → motivation
 - It's immersive (62%) compared to static images
 - Hands on, dynamic experience
 - **Little human interaction** → teacher role
 - **Not retaining knowledge** → teacher role
 - **Dizziness** → tech advancements and teacher mitigation



Preliminary findings: **cultural awareness**

- A preliminary analysis of the **written reflections** revealed that students will notice cultural facets that they might not notice in the traditional textbook (e.g., **no TVs in restaurants, how people move and interact, how buildings are placed and materials**).
- However teachers need to:
 - Guide students through the experience
 - Point out specific aspects that students might not be able to notice on their own (e.g., Mercedes bus)
 - Encourage open discussions - **VR viewing alone is not sufficient!**



Future directions


- Larger number of participants
- Actual implementation in the classroom context for a longer period of time (e.g., a semester or academic year)
- Use of VR videos that show cultural differences within the same country (e.g., in the northern part of Italy people take their espresso differently than in the southern part of Italy)
- VR hardware and language learning



Thank you!

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PDF of the presentation and
references available by request.