

# Interactive Emergent History as a Cultural Turing Test

E. M. Champion

Information Environments, School of ITEE, University of Queensland

---

## Abstract

Which factors help immerse people spatially and thematically into a cultural learning experience? Previous work has suggested that virtual environments are not like places, I would rather suggest that virtual environments do not allow us to learn develop and share as social agents who are thematically tied to a shared sense of cultural presence. In order to advance this argument I will suggest the definition of a few key terms, their significance, and how a scenario can be developed that attempts to test their worth while at the same creating engaging and meaningful interaction.

Categories and Subject Descriptors: H.5.1 [Multimedia Information Systems]: Artificial, augmented, and virtual realities.

---

## 1. Introduction

One of the functions of many virtual (online) environments is to engender social discussion. More conventional multi-user chat worlds that exist or have recently existed include, Activeworlds, Outerworlds, Vnet, Cybertown, Blaxxun communities, iCity, Galaxy Worlds et al.

However, few of these worlds contain persistent user data, the content is not directly related to learning, and the selection of avatars and ability to navigate and explore the ‘world’ are not thematically linked. Instead we have seen the development of social role playing ‘game’ worlds, a hybrid of role playing, game-style interaction, and collaborative virtual environments (Second Life, EverQuest, et al).

## 2. Interactive schemas

I suggest that virtual environments can be defined in terms of their schematic interactive aims. Simply put, virtual learning environments designed for historical and heritage based content are typically *configurative*, *reconfigurative*, or *discursive*.

In many games, for example, we can configure the world to suit a pre-designed plan or a pattern. Games allow us to navigate (avoid) and destroy things (in first person shooters anyway) or prioritize and predict (as in strategy games). So we are modifying the world with an eye to the future, especially for the sake of survival. In some cases, such as space invaders, we

appear to be defending the status quo through attacking enemies that would destroy us, however, we are keeping the status quo so that the future is advanced (i.e. so that the next level appears).

In a few cases we are solving clues so that the world returns to an earlier state, that is, by successful interaction events are returned, and we gain a picture of what was, or what might have been. I would call such interaction *reconfigurative*.

In the third interaction schema, we are not configuring the world per se; we are navigating through the social world of roles and responsibilities. I would call such interactive schemas *discursive*. In previous work I have avoided the term discursive, as it can mean so many different things, all verbal discourse, specialized linguistic understanding, or an exploration. Here I mean all three, general discourse to explore the world and one’s social role and relation to it, specialized linguistic discourse, as one builds up a particular individual picture, and discursiveness, as one is using trial and error to build up a social mindset of the virtual environment.

## 3. Issues in virtual worlds

### 3.1. Meaningful interaction over time

I suggested the above distinctions, as virtual heritage environments tend to use one of the three to teach its audience how past or distant people saw and learnt and acted in time and in space. We may learn

about the past by attempting strategies of design, or by working out what is hostile and what is friendly. We may learn about the past by finding and using triggers (significant artefacts, events, people, or inventions) to return to a previous 'golden age'. Thirdly, we may learn about people and events and items embedded in historical perspectives through role-playing.

The first two schemas are more conventional, for they allow one to find some past 'truth', some bedrock of fact. However, they restrain creativity and various approaches to what might have been. There is also an inherent conflict between the 'now' promised by interaction, and the past or 'prior' of the narrative. You can't have narration and interactivity at the same time; there is no such thing as a continuously interactive story [Juu01]. Yet this issue is often glossed over, virtual heritage environments must somehow create challenging, engaging, rich environments that also allow people to both learn and to explore without getting bored, and without confusing fiction for fact.

### 3.2. A virtual environment is not an airport

Undoubtedly, there are many cultural and ethical issues. For example, some critics see purely physical recreating of traditional societies as a typically Western phenomenon. Current notions of place in Western literature may be ignorant of other cultural perceptions of place as opposed to space [Suz97; Sar96].

Yet the obliteration or assimilation of other cultural histories is a trademark of all dominant cultures, not just Western ones. Virtual environments can contain more than objects, they can also force us to be constrained by the social roles and rituals residing in the environment that has been digitally simulated [CD02].

Virtual environments can be abstracted multi-modal, multi-perspectival, challenging, and culturally constrained. They can choose their own form of presentation, interface, navigation, narration, and goal. It may turn out that this infinite range of interpretative possibilities and contextually related interaction is both more socially constraining and more engaging to participants than some bland Westernised cyberspace.

### 3.3. Realism and completion

In many cases, photo-realism is a worthwhile goal. However, for depicting intangible heritage, and for participatory academic debate, it may not be the most useful means of depicting cultural knowledge. It may be difficult to reconcile interactivity with photo-realism, and the latter may imply an authoritative knowledge of the culture that the world designers do not in fact possess.

Attempts at static realism may also prevent us from seeing the local cultural perspective, or perhaps even be fully aware of the archaeological and anthropological debates and issues that relate to the site in question.

### 3.4. Visitors do not like to be led

Many virtual environments either allow people to explore at will, or provide guides to tell them what to see. If we instead give them contextually appropriate goals rather than let them wander around at will (i.e. as travellers or inhabitants rather than as tourists), and provide contextual constraints and affordances (just as some games do); this may actually increase their enjoyment, and increase their understanding.

My evaluations of over eighty people indicated that we should also be careful of the Instruction mode-where agents are merely used as static 'talking' guides [CS04]. Scripted avatars are quickly spotted, and visitors rush to talk to them. But they are also quickly discarded when it appears they are not human-like, when they are obviously not intelligent or dramatically motivated.

### 3.5. Cultural presence is not social presence

The sensation that a virtual environment is inhabited and 'modelled' by a thematic cultural outlook and identifiable social agency is not a feeling I associate with visiting many virtual environments. Part of the problem has been that many writers have confused cultural presence with social presence. For example, Schroeder [Sch02] distinguishes between co-presence ("the sense of being there together") and social presence, although he seems to think the latter is an individual's experience of being with another in a virtual environment, or, describes how well the medium helps generate this experience. While culture is a projection of society, and the mirror by which society can see its own values, I believe that we need to separate the two, for social presence does not necessarily lead to cultural presence.

A sense of a cultural presence, when one visits a real site, is inspired by the suggestion of social agency, the feeling that what one is visiting is an artefact, created and modified by conscious *in-world* human intention [CS04]. If I allow three hundred children in cybercafés around the world to meet each other in a virtual heritage environment, they may experience social presence. They may well make new friends, argue, or be bullied by others, but they won't experience cultural presence.

## 4. Suggestions

It is true that many successful online environments such as games are now multi-user. Yet where they allow several people to see each other, sharing of information is usually restricted to chat, sending files or hyperlinks; rich social interaction is limited.

People being social creatures may want to interact with and be recognizable to other travellers. On the other hand, they might want some control over the quantity or even quality of social interaction. While online gaming communities may argue that mods, information and other cultural exchanges are part of

the gaming experience, a great deal of the cultural transactions actually takes place outside of the game.

Cultural presence requires an encounter with a unified and thematic social agency that attempts to materialise its desires and values by giving these forces material expression through artefacts, rituals and places. In other words, a world.

#### 4.1. What is a world?

I suggest we attempt to create worlds, not places. For Weckström, in order to achieve 'worldliness', a virtual environment must also allow for various ways of doing things [Wec04]. For example, the worldliness of the Roman world' is in the multitude of different characters involved in making it a world. For this Roman world to be rendered virtually, it should offer the user the possibility to choose from a multitude of things to do, and lives to lead.

Weckström seems to be arguing both that a world should be specific, and it should allow you to do different things in different ways. In reflecting on this apparent confusion, I now think he may mean that 'worldliness' consists of three components:

1. The virtual environment offers at least one thematic cultural way of looking at things (for example, being a Roman).
2. There is more than one way of interacting with the world (you can invade countries, build roads, or deliver speeches to the senate).
3. The way of interacting with the virtual environment depends on your selection of a certain social role (although you can select different actions this depends on whether you are a Roman centurion, engineer, or senator).

His idea of 'worldliness' may also mean that there should actually be at least two thematic cultural ways available in the world, i.e. a Roman way, and a Barbarian way. In other words, the social and cultural framework is defined not just by how it allows people to communicate, but also by the existence of a distinguishing framework.

#### 4.2. What is agency?

I also suggest we create a sense of agency, rather than simply provide for multi-user environments. What is social agency? In game design 'agency' is generally considered to be the interactive range of possibilities afforded to the user. In Presence studies 'agency' is generally used as in 'social agency', the feeling that other people are co-present in the same virtual environment. I suggest that virtual environments with social agency afford the sense that others are agents and capable of cultural dialogue, and/or (in the above sense) that artefacts are socially interpretable or modifiable for transmission of social ideas.

Secondly, social agency may require hybrid learning methods available in the 'world' through which we become cultural agents. Thirdly, social

agency may be in a virtual environment where that 'world' affords different perspectives co-existing with each other in the 'actual' (if there can be such a thing) world.

Fourthly, and perhaps most unsurprisingly, a virtual environment may have social agency when it allows users to engage in socially significant or stratified activities, where their participation and identification and progress is based on social identification via predetermined but socially adjusted roles. This aspect of social agency requires a framework, and incentives to make people strive to improve their social role ranking. Fifthly, the social framework requires recognition from others. Hence virtual environments require social presence, a framework, a hierarchy, mixed perspectives, embeddedness, hybrid learning styles and methods, social baggage, and a recognition system.

#### 4.3. Hybrid learning methods

How do we cater for cultural learning? In previous research I had suggested and designed a tripartite model to explain and evaluate the above: that we learn by instruction, by observation, and by exploration (trial and error). However the results were inconclusive. I now recognise that my theoretical explanation of cultural learning was descriptive rather than prescriptive.

Culture is expressed via language and artefacts, and culture is both vaguely bounded and open to interpretation. To demarcate the boundaries of culture clearly and accurately is thus highly problematic. This means the theory is not a good model for evaluating cultural learning; most cultural learning is actually hybrid.

Can we blend game-styled interaction with virtual travel or heritage environments in order to learn through interaction? Despite literature conflating narrative with environmental storytelling [Car00:], knowledge derived from games is procedural rather than prescriptive. For example, gamers do not just learn what happened from observing features of place (shadows, openings, strange devices), they learn what to expect and where to move in case of trouble.

Likewise, in the real world, to travel through a country without outside resources we have to learn to 'read' the land, and solve local problems with local solutions. While tourists can learn from seeing how people do things, they themselves do not learn by doing but by watching the actions of others, by reading the interpretations of others, and by listening to others.

However, archaeology is usually attempting to uncover prescriptive knowledge, knowledge of events, what happened when, and who did what. Hence we could crudely separate games into those that attempt to unravel narrative (such as *Myst* and other types of interactive fiction), and those that allow interaction through doing (the competitive adventurer-explorer games). The former detective style games are much closer in spirit to the learning found in archaeology,

while contextual travel (rather than commercial luxury touring) is much closer to adventuring.

Progress in ‘adventure’ or ‘first person shooter’ games like Heretic II is through procedural learning, knowledge learnt through trial and error. There is also as a degree of social instruction, ‘as the last of your race, you need to do x’, and a degree of observation, ‘a key! There must be a lock nearby that I need to open..’ but the learning in the game itself is generally through doing.

The strategist type games, where one tries to develop empires through selecting resources (and sometimes throwing dice), may be a blend of both procedural learning (via calculated risk taking), and prescriptive learning (by the game providing historical facts about the resources that may help player decisions). This type of game may expose the workings of previous civilisations, and it may incorporate historical events in the way it works out permutations of player decisions, but as a learning platform, it encounters the problem of how to separate fact from fiction for the player [SB04; Mcf02].

Having said historical learning tends towards prescriptive learning and not the procedural learning emphasised in games, one might wonder if game-style interaction would not be of use in understanding other cultures. Many ‘3rd person shooter’ computer games such as Doom, Quake, Unreal, and Heretic, gain their popularity through challenging the participant to survive in a hostile world populated by aggressive agents.

While such computer games can be highly engaging, and do offer interesting methods of interaction, they typically do so to the detriment of cultural understanding, and certainly to the detriment of understanding and empathising with the local inhabitants and their unique cultural perspectives. However, I do not think all is lost.

## 5. Current ideas for meaningful interaction

The paucity of studies on interaction suitable for historical and heritage reconstructions became evident through my earlier research. A possible solution is to match generic forms of interaction in entertainment design with social interaction in distinctive cultures and historic periods.

A second approach is to apply game genres to suitable heritage reconstructions. We could also evaluate the usefulness of applying game genres’ social identities on participants and compare the results to a non-socially constrained environment.

### 5.1. Learning via social roles

Perhaps the most powerful way of historical immersion is via role-playing. I would like to explore role-playing, as it offers some possible solutions to pressing problems of creating ‘interactive history’, and it may be more engaging to learners than other types of interaction. Although theatre provides a strong metaphor library for virtual environments, improvised

theatre is more apt as it requires direct audience interaction while having some plot guidelines. Players could learn different ways of interacting with the world depending on the nature of their character’s background and the location of that character. The teacher or archaeologist or anthropologist could act as a game-keeper, allowing people to explore the parameters of their roles, give suggestions, and punish or reward players.

A discursive interactive schema allows us to learn about how the parameters of the social roles of the inhabitants allowed them to interact and to perceive their environment. Traditionally virtual heritage projects have avoided this schema, as it is less historically accurate and more emergent, and relies on game-style interaction and issues.

We could examine historical games such as Close Combat or Civilization for ideas on how tourists could interact more meaningfully and entertainingly with history. Games that perform the role of ‘game-fictions’ gain their engagement not from adherence to historical events but from their ability to depart from the historical record [Atk03; Jen04].

Whether the interaction is configurative, discursive or reconfigurative may depend on the social role of the participant and their type of interest, if they want to freely wander (like a tourist), or complete tasks (like a traveller). Hence we can tailor the virtual environment to the expected social role and objectives of the user, in terms of prescriptive learning as an archaeologist (detective), or tourist (non-playing character or observer) attempting to reconfigure the world, or in terms of procedural learning as used by the role-based traveller (adventurer) to explore discursively [see Table 1].

**Table 1:** *Learning via Social Roles*

<b>Participant’s Social Role</b>	<b>Cultural learning</b>	<b>Game examples</b>
Adventurer; reach goal without health terminated.	Mix of observation and trial and error.	Puzzle solving game or a 3D shooter game.
Invader or God-figure: control or overcome denizens.	Mix of observation and trial and error.	Typical 3D first person shooters, Black and White etc.
Inhabitant (non combative): avoid being killed.	(Hybrid mix of above).	Civilization, a socially restricted strategy game with instruction rather than conversation.
Inhabitant (combative): Control invaders.	(Hybrid mix of above).	

It may also be possible to learn about a virtual heritage environment as an inhabitant, but this suggests new game genres, for in games inhabitants tend to actually be displaced travelers suffering from amnesia (i.e. a hybrid of the social roles discussed).

## 5.2. Culture through transactions

Cultural behaviour is a subset of social behaviour, where behaviour is governed by or understood in terms of a cultural setting. As culture almost inevitably involves transactions, there must be objects of shared transactional value. One could possibly use this idea of transaction to afford both a bridging between and a revealing of different points of view.

In some game rendering engines available online, it is possible to be in one version of an environment while seeing a player in the same world even if they are at a different computer looking at a different version of the same world (Figure 1). While it may not immediately appear useful, by synchronizing the players and not the world an interesting scenario can be developed.



**Figure 1:** *Hermeneutic transfer*

Each player can see each other but each player is trapped in their own perspectival version of the world. Only through other players describing their world to them can invisible (unsynchronised) objects appear to the players. Individual avatars can interact with each other while being surrounded by their own virtual worlds and unaware the world of the other avatar is completely different.

This scenario would allow for understanding through sharing dialogue or interaction that makes the other's world or your externally perceived identity obvious to you. One might call this an example of *hermeneutic transfer*. Hermeneutics simply put is the act of interpretation. By *hermeneutic transfer* I mean that understanding is developed through sharing other people's interpretation of shared objects in order to share their world-view.

## 5.3. Social goal-based frameworks

In a sense, people are not just physically embodied; they are also socially embedded. Their motives, intentions, and actions can be fully understood only when referenced to a social perspective that makes sense of a specific physical environment. Recreating the objects that make up our society is however not recreating the society itself, as

some of our cultural knowledge is not ostensive and is not directly tangible.

A possible solution is to match generic forms of interaction in entertainment design with social interaction in distinctive cultures and historic periods. A second approach is to apply game genres to suitable heritage reconstructions. We could also evaluate the usefulness of applying game genres' social identities on participants and compare the results to a non-socially constrained environment.

## 5.4. A cultural Turing test

Writers have noted that culture is improvised and transformative, for social rules are not set instructions like chess [Til99]. Experiencing a virtual environment may be enhanced if the social rules and cultural artefacts can be modified. However, there are two aspects to this; the social world as lived by people inside the 'world', and the perceived social world projected into the environment as seen by people outside that 'world'.

Ideally, virtual environments should afford the 'inner' or etic viewpoint, which may be attempted by simulating initiation into local rituals. Hodder [Hod86], argued that "ritual regulates the relationship between people and environment", and that meaning is related to function. Tilley agreed, noting, "Rituals not only say something, they do something." [Til99]. Childe adds that myths are actually important. He argues that myths are instructions to do rational things, only the instructions often carry some additional irrational steps [Chi56].

A promising scenario to help people learn about rituals is to evaluate a multi-user virtual environment game where the task is to imitate local inhabitants' behaviour and dialogue in order to move up the social ladder without being caught (by scripted agents or by other users). There could be a mix of scripted characters and other real-world users, all are trying to detect and catch out inappropriate behaviour, interaction or dialogue (inappropriate in terms of space, time, or social encounter). Progression could be achieved by the advancement through a social hierarchy that in return offers more power and freedom of interaction.

Such a scenario requires a 'believably' intelligent Artificial Intelligence that appears to have agency, agon (competition), and alterity (otherness). However, as a sort of cultural Turing test, this scenario may allow the integration of historical fact, cultural behaviours, embedded multiple users, and goal based motivation that relies on acquiring contextually appropriate cultural knowledge, not destroying it. The Turing test asked people to decide if something behind a wall answering questions was human or an artificial intelligence (AI). Here in this scenario the participant is instead trying to stop the AI from realising she or he is actually human, and an interloper.

Such a scenario could be highly competitive, and puts the onus to perform authentically on the participant, not the virtual environment. A changing

mix of scripted characters and real world users adds a form of mystery and engagement, and helps ensure a reasonable level of challenge persists after the initial learning period. I believe this scenario addresses some of the problems of social presence and cultural presence.

On the one hand, multi-user environments are inherently engaging; on the other hand, we may wish to restrict users' contextual interaction and dialogue so that they learn about the local culture and not use the setting as a mere chatroom. By asking users to imitate inhabitants and avoid detection (by agents or other users), we are introducing challenging game elements while at the same time allowing them to learn contextually relevant behaviour and local knowledge.

Further, this scenario starts to address how users can play against each other without destroying notions of a past authentic world, but rather work towards that world. It also requires them being accepted by others, and not just observe, but also to emulate the behaviours and rituals of others. Actual events could be incorporated by suspicious locals asking the 'imposters' to show their local knowledge, which the 'imposters' could accumulate by either asking the correct questions or snooping around the site.

## 6. Conclusion

Whether cultural presence is transmitted via reading a palimpsest or by participating on a social stage, one must keep in mind that interaction is crucial in the creation of culture, and, by extension, in the understanding of culture. Users must understand their interactive relation to the 'world', whether it is by configuration, reconfiguration, or by discursive exploration.

Where the depicted environment refers to a long extinct civilisation, a bridging of cultural understanding is impossible, unless we somehow can bring the ghosts of the culture back to life. In this paper I have attempted to show how participants could tackle such a bridge, either in tandem or in competition, under the guidance of voices from the past.

## References

- [Atk03] ATKINS, B.: *More Than A Game: The Computer Game As A Fictional Form*. Manchester: Manchester University Press, 2003, pp.88-89.
- [Car00] CARSON, D.: Environmental Storytelling: Creating Immersive 3D Worlds Using Lessons Learned from the Theme Park industry. *Gamasutra: The Art and Science of Making Games*. (March 01, 2000). [http://www.gamasutra.com/features/20000301/cars\\_on\\_01.htm](http://www.gamasutra.com/features/20000301/cars_on_01.htm)
- [CD02] CHAMPION, E., DAVE, B.: Where is this place? *Proceedings of ACADIA2002*, Association For Computer Aided Design In Architecture Annual Conference, Pomona USA, (October 2002), 87-97.
- [CS04] CHAMPION, E., SEKIGUCHI, S.: Cultural Learning in Virtual Environments, *VSMM2004 Hybrid Realities: Digital Partners*, Ogaki City, Gifu, Japan, (17-19 November 2004), 364-373.
- [Chi56] CHILDE, V.G.: *Piercing Together the Past*. Routledge & Kegan, 1956.
- [Hod86] HODDER, I.: *Reading The Past*, Cambridge University Press, 1986.
- [Jen04] JENKINS, H.: *Game Design as Narrative Architecture*. Electronic Book Review, 2004. [http://www.electronicbookreview.com/v3/servlet/ebr?command=view\\_essay&essay\\_id=jenkins](http://www.electronicbookreview.com/v3/servlet/ebr?command=view_essay&essay_id=jenkins)
- [Juu01] JUUL, J. Games Telling stories? A brief note on games and narratives. In *Game Studies, The international journal of computer game research*, volume 1, issue 1, (July 2001). <http://www.gamestudies.org/0101/juul-gts/>
- [Mcf02] MCFARLANE, A.: Listening to Children, Parents and Teachers. *GAME ON – THE CONFERENCE: Exploring the Potential of Computer Games in Learning*. Conference Proceedings, (20–21 November 2002), 12-14. <http://www.ltscotland.org.uk/files/gameonproceedings.pdf>
- [Sar96] SARDAR, Z.: alt.civilizations.faq: Cyberspace as the Darker Side of the West. In Z. Sardar, Z & J. Ravetz, (eds.), *Cyberfutures: culture and politics on the information superhighway*. Pluto Press, 1996.
- [Sch02] SCHROEDER, R.: Copresence and interaction in virtual environments: an overview of the range of issues. *Proceedings of the Fifth International Workshop on Presence*, Porto, Portugal, (9-11 October 2002), 274-295.
- [SB04] SQUIRE, K., BARAB, S. A.: Replaying history. In *Proceedings of the 2004 International Conference of the Learning Sciences*. UCLA Press, 2004. <http://labweb.education.wisc.edu/room130/PDFs/squire01.pdf>
- [Suz97] SUZUKI, H.: Introduction. In S. Ken & H. Suzuki, (eds.) *The virtual architecture - the difference between the possible and the impossible*. Japan: Kenchiku Hakubutsukan. Yonsei University, Seoul, Korea, 1997.
- [Til99] TILLEY, C.: *Metaphor and Material Culture*, Blackwell, 1999.
- [Wec04] WECKSTRÖM, N.: *Finding "reality" in virtual environments*. Thesis. Helsingfors / Esbo: Arcada Polytechnic, Department of Media, Media Culture, 2004.