Digital technologies, in the form of modeling buildings, people, and their activities, are becoming a popular vehicle for the re-creation and dissemination of cultural heritage. Together with video game engines, they can be used to let users virtually “inhabit” the digitally recreated worlds. Yet, like every medium ever used to preserve cultural heritage, digital media is not neutral: perhaps more than any older technology, it has the potential to affect the very meaning of the represented content in terms of the cultural image it creates. This paper examines the applications and implications of digital media for the recreation and communication of cultural heritage, drawing on the lessons learned from a project that recreates the thriving jazz and blues club scene in West Oakland, California, in the 1940s and 1950s.
1. INTRODUCTION
Immersive, interactive digital media presents a technology-driven alternative to traditional cultural heritage preservation techniques, such as archeological and cultural sites, museum exhibits, books, and films. In particular, Multiplayer Online Role Playing Games (MORPG) can move state of the art of cultural heritage preservation beyond static displays, capturing in interactive, immersive, game-like form the social, cultural, and human aspects of the sites and the societies that inhabited them. In so doing, the technology provides viewers with a measure of presence in the site, allowing them to participate in events, interact with representations of the former inhabitants of the place, and meet fellow visitors. This paper describes one such effort—the digital reconstruction of the jazz and blues club scene in Oakland, California, during its heyday in the 1940s and 1950s.

2. WEST OAKLAND, CALIFORNIA
In the 1940s and 1950s, 7th Street in West Oakland was a bustling commercial district, anchored by dozens of jazz and blues clubs that earned it a reputation as a West Coast rival of the Harlem music scene. Most of the legendary blues and jazz singers and musicians, as well as soul and rhythm and blues artists, performed at these clubs, including Jimmie Witherspoon, Sugar Pie DeSanto, Ivory Joe Hunter, Saunders King (Carlos Santana’s father-in-law), B.B. King and Aretha Franklin. The centerpiece of the club scene was Slim Jenkins Place, a sprawling upscale establishment that took up much of a city block with its huge dining area and elegant bar (Figure 1). Many musicians got their start performing at the 7th Street clubs, defining a distinct Oakland blues sound and cutting their first records with local music promoters like Bob Geddins and his Big Town recording studio and production company.

Complementing the clubs were numerous other business establishments up and down an eight-block stretch of 7th Street, all of which made it one of Oakland’s major commercial and retail centers at the time. The street was home to colorful characters such as “The Reverend” who, along with his wife, preached from street corners, and Charles “Raincoat Jones”—a former bootlegger turned loan shark and dice game operator—who was known as the unofficial mayor of 7th Street and helped finance some of the jazz and blues clubs.

7th Street had blossomed in the post World-War II era because of its proximity to Oakland’s waterfront, where workers had migrated from around the country to work in the naval shipyards during the war and sailors and soldiers were stationed at the military bases along the bay. Many of them later settled in West Oakland,
including a large number of African Americans from the South who brought with them the jazz and blues sounds from states like Louisiana and Texas. West Oakland was also the terminus of the transcontinental railroad and the West Coast headquarters of the International Brotherhood of Sleeping Car Porters, the first national black union. Many of the porters made their homes in Oakland, and served as a distribution network for the 7th Street music, taking records cut by local artists and transporting them on the railcars for sale in cities across the country.

By the mid 1960s this remarkable part of Oakland’s heritage was all but destroyed, the victim of a number of different urban redevelopment schemes. In the 1950s the Cypress Freeway was built, an elevated highway that sliced across 7th Street and effectively isolated it from the city’s downtown. In the 1960s the Bay Area Rapid Transit (BART) rail and subway system was constructed, an elevated structure that created a huge eyesore and deafening noise from passing trains. Also in the 1960s, a stretch of several blocks along one side of 7th Street was leveled to make way for a mammoth 12-square-block U.S. Postal Service distribution facility. A surplus World War II Sherman tank was used to demolish the old Victorian homes along side streets and make way for the postal facility (Figure 2).

Today, a walk down 7th Street reveals almost no hint of the vitality of the area and the once thriving jazz and blues club scene. The street is marked by boarded up buildings and empty lots and plagued by drug dealing and crime. The only remaining music club from the 1950’s is Esther’s Orbit Room. The Cypress Freeway structure, which collapsed during the 1989 Loma Prieta earthquake, was torn down and the freeway re-routed around 7th Street, the fruit of community pressure. Only a scattering of businesses now exist along 7th Street.

The story of 7th has been told in bits and pieces over the years in a variety of different media. Newspaper stories have been written about the club scene (Grabowicz 1982). More than a dozen books on Oakland or on jazz and blues music have included segments describing the 7th clubs or the redevelopment projects that caused their demise. The 7th Street club scene was a main subject of two documentary films, and various reports done for governmental agencies have recounted the history of 7th Street and its decline (Grabowicz 2006). Several oral history projects have preserved in audio interviews the remembrances of some of the key figures in the 7th Street scene, and a few photo collections exist at the African American Museum and Library at Oakland.

However, none of these accounts have told the story of the clubs and what happened to them in a comprehensive way. More importantly, these media present the story in a detached or visceral way that does not allow the reader or viewer to truly “experience” what 7th Street was like. Newspaper stories, books and other printed formats can only employ descriptive terms or accompanying photographs to evoke what some of the characters on 7th Street may have been like as people. Oral histories and video interviews of some of the personages from 7th Street provide first-person and often highly emotive descriptions of what the people and the 7th Street scene were like, but require the listener/viewer to use his/her imagination to conjure up images and fill in the blanks. The listener/viewer remains detached from, rather than immersed in, the experience of 7th Street. The experience is passive, and in the case of documentaries requires the viewer to follow a linear storyline imposed by the filmmaker.

To recreate as faithfully as possible the experience 7th Street requires a digital technology that is both interactive, i.e. it allows the user to choose, and immersive, i.e. it uses visual and audio stimuli simultaneously to give the user the sense of being in a place. This new media technology is able to replicate a person’s real-life experience of moving about within the world (Murray 1997).

3. “PLACE” AS METAPHOR

The convergence of the desire to re-tell the history of 7th Street and the advent of new media have provided us with the opportunity to develop an immersive, interactive, non-linear narrative that will help visitors experience 7th Street’s cultural heritage as it was in the 1940s and 1950s. We chose on-line, multiplayer digital gaming as the vehicle to communicate the experience. But digital gaming is a new technology, with a relatively short history, devoid of a comprehensive theory, and short on useful precedents to guide the development of virtual cultural heritage experiences (Salen and Zimmerman 2003).

We chose the all-encompassing metaphor of Place to help guide us in creating a virtual world. A “place” is a setting that affords the entire spectrum of human activities, including physical, social, and cultural activities, while affecting, and being affected by, those activities. It pertains to both physical and non-physical settings. On one hand, place is often used to describe the territory that we build; the boundaries of this territory are defined by a sense of being inside—inside a region, a town, a neighborhood, a building. But the boundary is identified not by a demarcation of its edge, but by the feeling of coherence of the spaces, objects, and activities within it, which give rise to a competence in the way a place is built and inhabited (Chastain and Elliott 1998). The physical attributes of the place frame those activities,
and provide its inhabitants with a socially shareable setting for their activities, in terms of cues that organize and direct social behavior that is appropriate for that particular place (Harrison and Dourish 1996).

We chose to compare our virtual place-making to stage-plays which include a stage (a context), a narrative (the play), and actors (including the audience). The notion of place as a stage-play drives literary works, films, video games, and architecture. It provides a framework for understanding the individual contributions of the components and their mutual interactions. Figure 3 illustrates the components and their relationships.

The ‘stage,’ or context, comprises both space and time. It affords spatial and temporal grounding for the entire enterprise, and includes spatial components like buildings, trees, topography, sky, etc., and ‘props’—objects that can be manipulated by the actors or can act on their own (trains, cars, etc.). The ‘actors’ include avatars, or PCs (player characters), which are human characters controlled by the people who are logged into the system; and agents, or NPCs (non-player characters), which are pre-animated, semi-autonomous entities, that perform pre-scripted roles, but have action modification capabilities based on some sensory input (e.g., they can start a certain action sequence when an avatar approaches within a pre-defined range). The ‘play,’ or narrative, includes both cultural heritage aspects, and the activities that take place in the environment (known together as simulation/action). Together these components tell the story (or stories), and afford the freedom to participate in the story.

The interactions between these components are what make them a ‘place’: the avatars, which are the representations of the visitors, can ‘see’ other avatars (as well as the other components of the game), and be ‘seen’ by them. Hence, if one raises its hand, others will see the action and react to it, generating a kind of social awareness. Likewise, the NPC agents can be seen by the visitors, and can react to their presence. This reaction both conveys some of the essence of the cultural heritage (they can tell stories related to the history of the place), and adds to the authenticity and ‘sense of place’ of the experience. And of course the context (buildings, cars, etc.) help locate the experience, both spatially and temporally.

4. THE “STAGE”
Finding the appropriate documentation that describes the built environment and the ‘props’ for the period being reconstructed turned out to be an unexpected challenge. In the case of 7th Street, extensive urban development has literally obliterated entire blocks of buildings, and significantly modified the remaining ones. Period photographs, which depict the built environment at the time, were hard to come by, as they were scattered in a number of different libraries, museums, public and news media agencies that had photo archives of Oakland.

As a result, at least in the initial phase of our project, the re-creation of many of the buildings on 7th Street had to rely in large part on using photographs of a few blocks of 7th Street or of other nearby commercial streets from the 1940s and 1950s to produce generic representations of the building. Moreover, since all our photographs from the 1940s and 1950s were in black and white (actually, grayscale), we decided that all buildings would be rendered in grayscale. The time of day was set to be early evening, while there is still enough light to see objects and characters clearly, but late enough to support the story line when bars are open.

The eight city blocks comprising the target of our study were modeled in 3DStudioMax, a conventional modeling software program (Figure 4). The models were exported to Torque, a game engine, made by Garage Games, which powers our virtual world. Like other similar engines, Torque incorporates a physics engine, whereby ‘gravity’ is imposed, solidity of objects can be enforced, and time of day and weather phenomena can be included. Torque also provides mechanisms to support PCs and NPCs (player characters and non-player characters), which were useful for implementing the actors, as discussed in the next section.

5. THE “ACTORS”
The second main challenge in building the virtual world was character development, both physical and literary. The physical challenge has been mostly technical: modeling human beings is difficult; because we are so accustomed to seeing them in real life, any discrepancy is immediately, and disturbingly, obvious. We needed to
We incorporated this information into the game by writing interactive dialogs in which the player could engage in a conversation with an NPC, and ask a series of questions that would prompt the NPC to recount details about their personal history. Thus the player could learn about many of the main characters of 7th Street—Raincoat Jones, Slim Jenkins, Sugar Pie DeSanto, C. L. Dellums—by engaging their characters in conversation directly or by interacting with other NPCs who would provide some biographical information about them.

A bigger challenge was developing the literary 'persona' of each NPC. It was our intent from the beginning to tell the story of 7th Street as much as possible through these NPCs. This included not only delivering the factual parts of the history of 7th Street, but also its flavor. This flavor, which is a major component of the ‘sense of place,’ is intimately intertwined with the characters—how they speak and the particular colloquialisms they use; and how they behave, such as whether they are animated and funny, or somber and gloomy (Sheldon 2004a).

6. THE “PLAY”

Finally, the component that brings everything together is the activity, or narrative. What does the player do in the virtual world and game environment, and how are all those actions and interactions tied together in a larger experience of the meaning of the virtual world and the story that unravels about it? In the case of the 7th Street project we tried to do this by creating both individual ‘quests,’ small missions the player must accomplish in order to learn the history of 7th Street, and developing an overall narrative that tied these individual quests together in a meaningful way.

The latter issue of the larger narrative begged the question of what genre of video game we wanted to employ to provide a structure for game play and a meaningful experience for the player (Novak 2004). One possibility was a “simulation” game, in which the virtual world is based on a real world and the player finds meaning by mimicking some of the real-world activities in the virtual world environment. While our recreation of 7th Street as a virtual world obviously had strong elements of simulation games, we decided, for at least the initial phase of the project, to limit the simulation to events that have actually happened on 7th Street, but to not allow the player to make significant changes in the game world (as virtual worlds like SecondLife allow) (Novak 2006).

A second genre of video game play that had obvious application to our project was the multi-player game. From the beginning we had decided that our game should be multi-player, allowing many people to log in to the game at the same time and interact with each other in...
the virtual world. This was in part because 7th Street was very much a social scene, and our game therefore needed to be a social experience.

The third genre of video game that had obvious application to our project was the adventure game. In adventure games, the player usually explores a virtual world and gradually unravels the mystery of that world through a series of tasks and quests (e.g., Myst). This was a natural fit with our conception of the 7th Street project and thus was the main approach we took in designing the initial phase of the game—giving the player a series of tasks that could be performed to gain a sense of what the 7th Street scene was like and to learn about the forces that prompted the decline of the clubs.

To implement this approach, we wrote a series of interactive narratives, which we called “quests,” in which the player would interact with NPCs or objects to learn about various aspects of 7th Street (Figure 6). The player would encounter an NPC and be allowed to ask a question using the chat feature of the game engine. The NPC would respond, and that would open up the chance to ask a second question to which the NPC would respond, and so on. From this interchange, the player would learn about the NPC or about some other aspect of 7th Street. These simple quests were later expanded to allow the player multiple choices, so the player had the option of asking several different questions during the encounter, making the interactions less linear and enhancing the game play by providing the player with multiple routes through which an NPC’s background could be explored.

At first, the quests were kept independent of one another, so completion of one quest did not require completion of another. But this simplified approach proved unsatisfactory because it reduced the game experience to a somewhat rudimentary form. We then attempted to group together some of the quests and arrange them into stages, or “levels,” so certain quests had to be performed in order to gain access to another level of quests, which in turn led to a third level of quests and the ultimate completion of a portion of the game story (Sheldon 2004b). This increased the degree of gameplay, but complicated the storytelling with a multitude of options that the narrative now had to take account of, depending on what NPCs the player had interacted with and in what order. It also posed challenges for the character development of individual NPCs: they often became more of a vehicle in the service of the game play, rather than providing an opportunity for detailed knowledge about that NPC’s character (and thus getting to “know” the character), underscoring the long-standing tension in the video game world between game play and narrative (Jenkins 2006).
Narrative was clearly essential to our project, as our original purpose was to tell the “story” of the 7th Street clubs and what happened to them. But game play was equally important. We had selected a video game as the best way to tell the story because it allowed people to truly experience 7th Street as it was through meaningful game play, rather than simply producing an objectified linear narrative in one media form or another, or opting for a museum-like experience that would have a stage and actors, but no overall play. To create the experience we sought through a video game and effectively combine story and game play requires going back and mapping out a particular narrative—a way of telling the story—and then drawing on the different aspects of video game play to help tell that story. In accordance with the place metaphor, this narrative must be played out both spatially and temporally: spatially, along the street, and temporally, as the player interacts with the NPCs and other players (Figure 7).

New media reconstructions of historical sites, artifacts, and activities bring new opportunities to the practice of preservation and the communication of cultural heritage. Visual verisimilitude, coupled with non-linear storytelling, immersion, and interactivity, affect each aspect of the practice. But their critical implications are not limited to the technical aspects of representation. Rather, new media have the power to transform the practice of cultural heritage preservation and communication wholesale, possibly affecting the meaning of the term heritage itself.

The relationship between representational technologies and the cultural heritage they communicate is an ancient one. Cave drawings from the upper Paleolithic age, Homeric and others oral epics, and later scrolls and codices, have each exerted its own influence through the process of remediation. The invention of photography early in the 19th century had a particularly strong impact on the representation of cultural heritage, an impact that was further enhanced with the invention of cinema—a medium able to capture the passage of time itself. The advent of digital game technology—the new medium of remediation—has the potential to affect cultural heritage in even more profound ways than before.

New media is a technology that has the power to create world-altering experiences of places and times that are no longer accessible. Although New Media is an imagined, intangible experience, it is a real one, nonetheless. The image of history it communicates is mediated both through technology itself, and through the authors and technicians who render it. The authors and technicians who wield the storytelling power may know how something is done, but are only now discovering the values implicit in their particular way of rendering the narrative.

This brings us back to the original question of how best to construct the “play” aspect of the methodology we have adopted: which one of the various video game genres is more appropriate than others? Should we use the adventure game approach, but write an overall narrative first about what 7th street was like and what happened to it, with the characters, quests and levels of game play stitched together within that framework? Is that narrative compelling enough to motivate people to want to play this game? Is simple curiosity or a desire to learn about or re-experience 7th Street, its music and its history an alluring enough adventure? Or does the story instead need to be written more as a mystery to be solved (an aspect of most adventure game), with the player unlocking the secrets of 7th Street and what led to its demise? Should we give the player the ability to change the course of history and make the game about saving 7th Street (thus drawing on simulation games and the player’s ability to re-create aspects of the virtual world)? Or should we make the game more of a social experience and allow players to band together, perhaps in competition with one another, to save or destroy 7th Street (as in multi-player games)?

These are all questions to be resolved as the genre of games as a means of communicating culture evolves and assumes its place among other forms of historical remediation.

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