Notes on Practice

Carrie Roy and Tim Frandy

Examining Augmented Reality as a Platform for Situated Ethnography through the Lens of the ARIS *Wisconsin Uprising* Game

This review explores the use of the Augmented Reality Interactive Storytelling (ARIS) platform to create geographically situated educational and ethnographic video games on mobile Apple devices like iPhones and iPads. Using the example of a game our research team developed to document the Wisconsin Uprising of 2011, we detail in this review the technical capabilities, formats, and features of ARIS, along with their respective merits and limitations. We also consider theoretical implications of presenting ethnographic fieldwork through interactive ethnographic games. ARIS games demand heavy editing and the fictionalization of ethnography, but offer opportunities for players to interact with fieldwork in ways that challenge traditional notions of ethnographic representation.

AUGMENTED REALITY INTERACTIVE STORYTELLING (ARIS) is an open source platform developed at the University of Wisconsin-Madison, which offers an interface for creating innovative new possibilities in ethnography. While the project is referred to as "ARIS Games," this review explores the platform's potential as a tool in sharing situated ethnographic documentation and resources through both game and educational tour formats. Beyond the technological attributes of the ARIS platform, we discuss a specific example—a game we worked to develop called *Wisconsin Uprising*—to explore possibilities and theoretical implications of this form of ethnographic documentation; these include ARIS's capacity to document the temporal aspects of complex events, the necessary role of "fiction" in ethnographic games, and the potential for interactive games to expand how folklorists conceive of ethnography.

ARIS runs on any iOS device such as an iPhone or iPad (iOS 4.0 or higher), and an Internet connection is required to play. Key to the ARIS platform is that it superimposes a game space experience through images, sounds, and text on a handheld device

CARRIE ROY is Coordinator for the Humanities Research Bridge, University of Wisconsin-Madison

TIM FRANDY is a PhD candidate at the University of Wisconsin-Madison in the Folklore Program and the Department of Scandinavian Studies

Journal of American Folklore 126(499):70–78

upon an actual physical environment experienced as the player moves through concrete physical space. Other ARIS games include a situated documentary on the protests at the University of Wisconsin-Madison campus in 1967 over the use of napalm titled *Dow Day*, and *Greenbush Game*, which—set in 1959—explores the Madison Greenbush neighborhood in a quest to save it from demolition. Each of these games allows the player to view present space in terms of past events and ethnographic data. Our team (the authors, Thomas A. DuBois, and John Martin) designed a game called *Wisconsin Uprising* to capture the events and share the documentation of the Wisconsin protests in the spring of 2011. Within *Wisconsin Uprising*, a player chooses to experience the largest protests in the history of Wisconsin through either a historical tour or an interactive game. Both offer the stimulation of interacting with a real place in terms of historical time: as the player stands at the empty Capitol Square, he or she sees images and video of a hundred thousand people who congregated there in opposition to anti-union legislation in the late winter through summer of 2011.

In order to experience the game, it must first be built in an online editor. The online editor provides users an interface in which they design their tours or populate their game maps with characters, informational content, dialogue, media files, and more. The creator begins by providing a unique name to his or her project, locating the game in a specific geographic region on a map, and then proceeds to add content and logic to structure the user experience. When a user is playing the game in the physical game location, he or she can literally walk up to and encounter different virtual objects or characters and interact with them (this is enabled through Location Services using GPS information on the iOS device). Our team carefully worked through the game's content, object types, and logic by storyboarding the different phases before we proceeded to upload and enter items through the online editor. Since all content is dis-

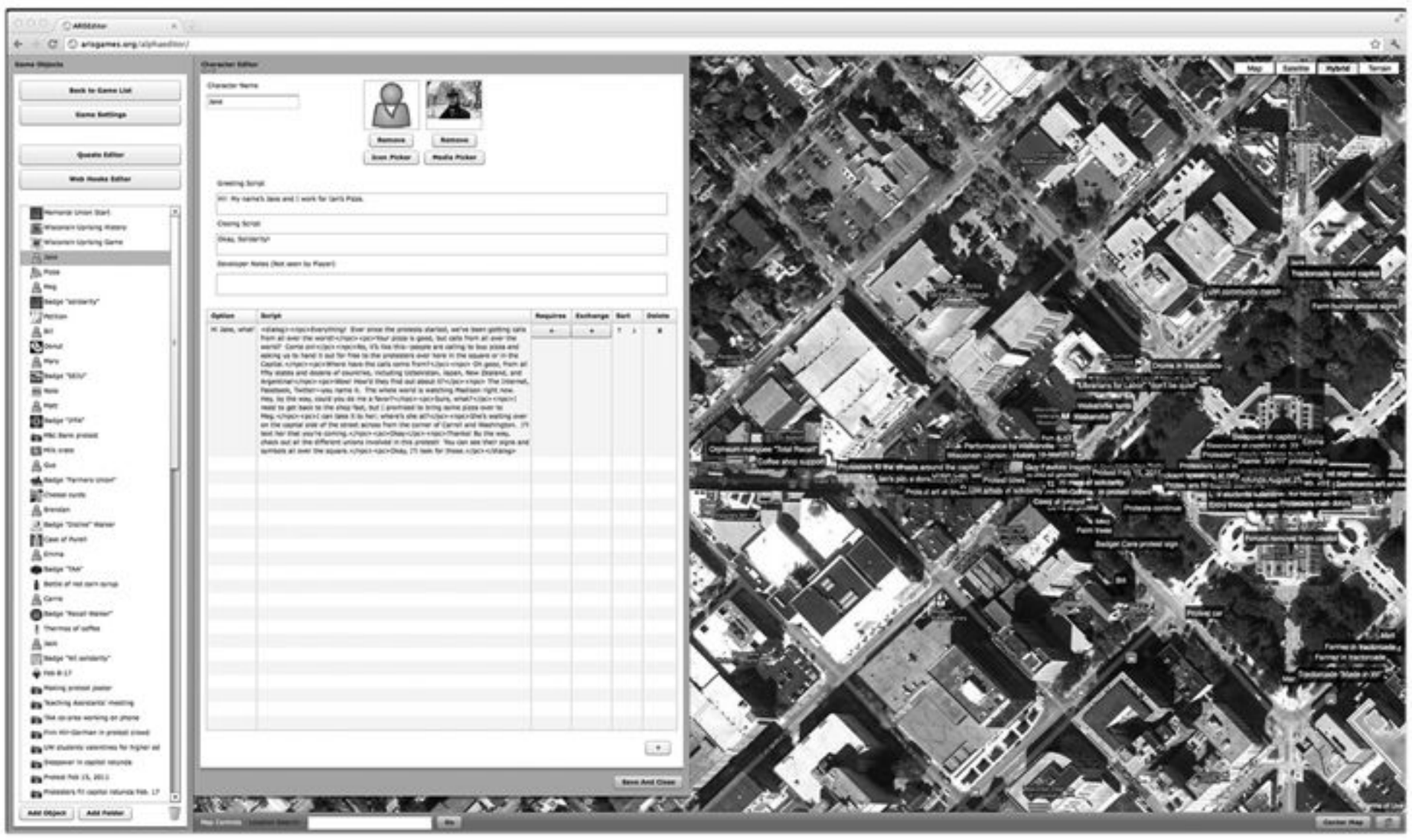


Figure 1. Image of ARIS online editor window ("object" inventory along left; object editing window center; and situated map of objects on right).

played on the editor (which can become cluttered and confusing), it is best to work through the content entry deliberately, phase by phase, and methodically enter media and logic in a consistent manner.

This platform would be particularly useful for outdoor museum tours, walking or driving tours, and may be situated in neighborhoods, cities, or even regions. With all these examples, it is important to begin by considering the user experience. For example, careful selection of object types represents an important pre-production decision. Incorporating an object type "character" allows users to receive instructions, information, and objects, and engage in dialogue with a virtual person or entity. In our game, the pizza delivery guy asks players to deliver pizza to a protestor, and players receive a badge when they have completed this quest. A "plaque" is a type of object associated with a place or a specific location on the map.

For instance, in *Wisconsin Uprising*, a 360-degree video of the massive March 12 crowds is a "plaque" located on the cement median from which it was filmed. When a player approaches a plaque, the plaque can perform many of the functions of a character (offering information, granting objects, access, etc.), but it does not engage in back-and-forth dialogue. An "item" is a good object type choice for content that is mobile. A user can choose to pick up an item and add it to his or her inventory and later drop it for another player to collect. An item can also offer media and information to the user. Object type "WebPage" offers access to webpages, and "Panoramic" enables 360-de-

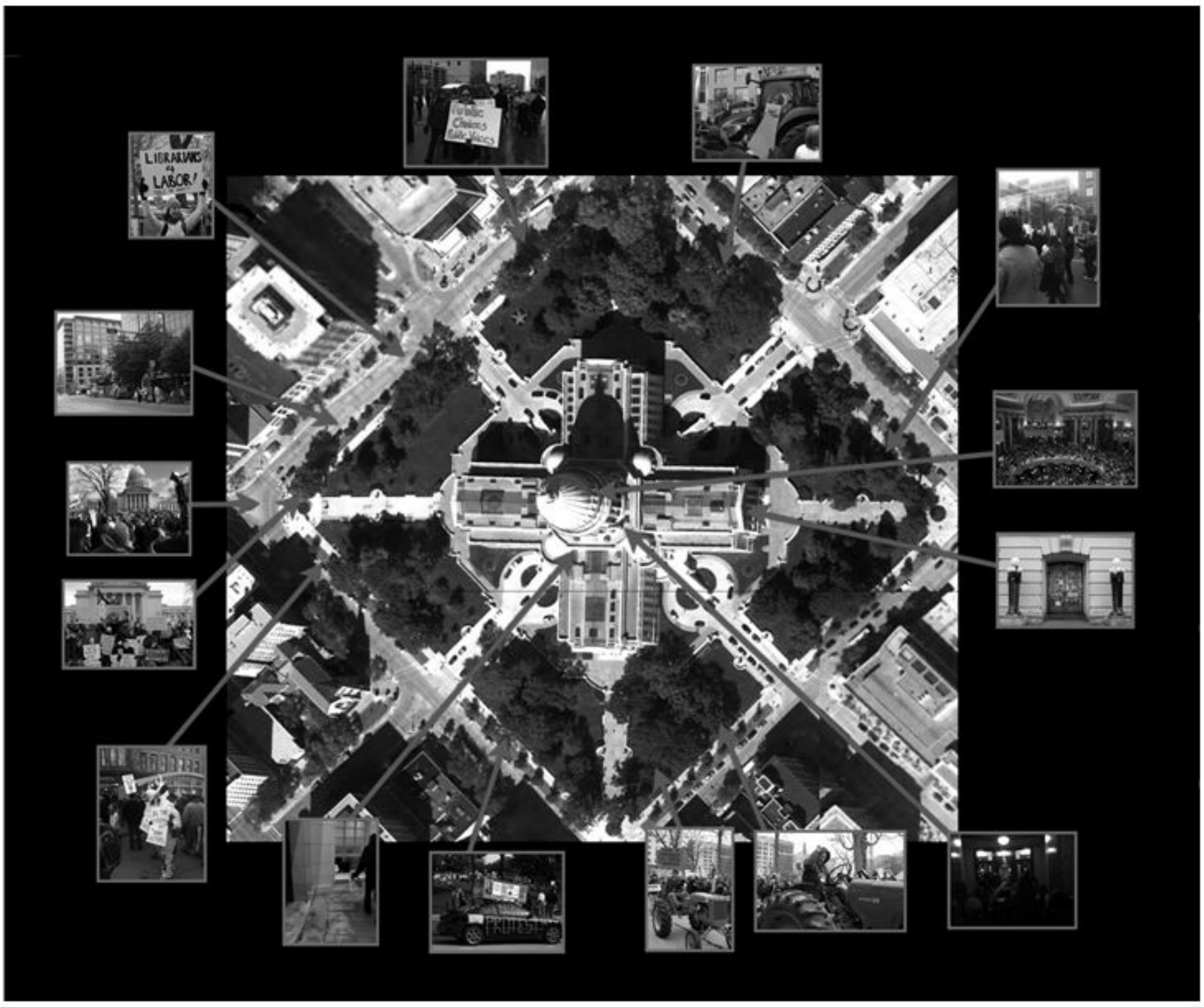


Figure 2. Plaque locations in Wisconsin Uprising game track.

gree views of specific locations on the map. A recently added collaborative feature offers a "notebook" with user-provided content that can be tagged and shared. In the editor, the creator selects the object type he or she is interested in adding, fills in the name of the item, adds an icon, media, text (description, dialogue, information—depending on the type of object) and then drags the object into position on the map. Additional controls over when and how the object appears to the user (the logic) can be edited in a window that appears when the object on the map is selected. One very important option is enabling "quick travel," which allows users not in the physical game region to advance around the map remotely and "play" the game.

Our team had difficulty deciding on one form of presentation for sharing the Wisconsin protest documentation, so we decided to split the game into two branches. The "WI Uprising Game" branch involves encountering ten characters, engaging in back-and-forth dialogue to hear their different perspectives on events and how the Wisconsin Budget Repair Bill will affect their livelihoods (farmers, teachers, nurses, students, etc.). The characters engage the user along a specific ordered route with "quests" to help in the protest movement such as delivering pizza, petitions, donuts, notes, milk crates, cheese curds, cases of hand sanitizer for the capitol occupiers, fake blood for the zombie march, and coffee for the tent city residents. The user is rewarded with badges and protest points, and is able to view media documenting different signs, scenes, and moments from the protest throughout the journey.

In contrast, "WI Uprising History" does not contain characters, points, or badges, but offers self-guided exploration of the following phases of the protest movement: February 8–17 (the introduction of the bill and early opposition organizing efforts), February 18–March 8 (capitol occupation and subsequent lockdown), March 9 (documentation of the evening the State Senate passed the bill and protesters stormed the capitol), March 12 (a large rally on the square featuring a "tractorcade" and celebration of the Democratic Senators' return), and March 13+ (a variety of creative protests, rallies, and the recall efforts). Each phase offers an assortment of photographs, video, and audio the user can navigate to on the map, and the media windows contain descriptions and attribution information. While we agreed that one of the most powerful features of this platform is how users can experience these moments while standing in the same locations in which they were documented, we also felt it necessary to enable "quick travel" remote playing for all components of this game.

Sharing photographs, video, and audio files documenting the Wisconsin protests is another great triumph of this platform, but there are some limitations with regard to file type and size. Images require .jpg or .png file formats. For audio recording, a waveform audio file (.wav) can be used. For images, one is limited to rather small file sizes for important features of the game: plaque image 320 × 320 pixels, characters 320 × 416 pixels, map icons only 30–48 pixels across. Also, in order to stream over slow networks, the video format (.3gp, .mp4, .m4v, etc.) needs to be encoded as H.264 (optimized as 160 × 240 pixels). A video of such low quality poses a particular challenge in sharing the wonderful protest sign images because many become illegible with this compression. We would recommend people building a game in the editor keep a "raw" files folder where full-size files can be stored that offer a potential future, higher quality format to the cropped or compressed files currently required for this game.

It is worth noting that, like so many other exciting technical advancements, temporary crashes, glitches, and breaks are not uncommon with this platform. For example, unusual character signs such as "—" may break dialogue code, icons have been known to temporarily swap, unresponsive editor windows may be addressed through trying different browsers, and crashes can be triggered by platform or network service provider issues. Another challenge is learning the user interface and game logic. While the ARIS games team provides instructional videos and an online manual, runs a listserve for questions, and offers regular game jams, many who admire the possibilities of this platform find creating and understanding the logic or requirements for objects in a "game" scenario challenging. The exploratory nature of the tour we developed required extensive logic entry for each of the 80+ items to prevent cluttering. However, later consultation with the developers revealed a simpler (but somewhat unintuitive) entry alternative involving a token system. One has to invest the time to learn the vocabulary and logic of this platform to effectively create with it. These relatively minor criticisms should not detract from the impressive potential and rewards offered by this platform. Furthermore, the design team is very responsive to feedback from users and eager to improve the system and user experience on all levels.

ARIS blends traditional modes of ethnographic presentation with new methods of delivering digital content. For example, ARIS historical tours serve as effective multi-media counterparts to traditional guided walking tours. Our historical tour "WI Uprising History" utilizes the familiar "historical plaque," a staple of the guided walking tour, but then augments it with multi-media documentation and information. As a specific example, in *Wisconsin Uprising*, GPS data allows a player touring the events of March 9—a pivotal day in the protests—to walk toward the southeast corner of the Wisconsin State Capitol and trigger an ethnographic video of protesters streaming into the capitol through the women's bathroom window. In this sense, one can simulate the experience of the protests virtually in geo-local historic time. In particular, because of the inclusion of situated ethnographic video, experiencing a bathroom window in the present, alongside the historical echoes of its dramatic past, can indeed be powerful and transformative.

Conceptually, ARIS also differs from more traditional means of historical presentation because it presents new possibilities to situate historical tours within time. During the Wisconsin Uprising, the signs, costumes, messages, and spirit of the crowd were largely dependent on the whirlwind of political events that played out in the chambers of the statehouse and within the national media. Our team felt, for instance, that it was necessary to distinguish the earliest exciting and surreal atmosphere of the protest and occupation from the downtrodden but resolute spirit that followed the questionably legal passage of the legislation. In order to do this, we separated the historical tour into different fragments of time, which we felt developed a representative spectrum of experiences and the evolving nature of the protests over the course of approximately seven months. Some of these periods lasted only hours, whereas others lasted weeks or months. ARIS offers a highly effective and efficient platform by which folklorists can document a complex and evolving form of community-based expression, as the intense, emotional highs of a protest grow into an enduring and sustained movement over time.

While it is easy to make a case for the merits of the historical tour, the interactive game also provides a valuable educational tool for young people and adults, and it should be of particular interest to public folklorists. Though simple and linear educational games, such as *Oregon Trail*, are commonly regarded as ideal for a middle-school audience, ARIS games can be designed to appeal to adults. Adult gaming is currently flourishing within the United States, with 72 percent of American households playing video games, with an average gamer age of thirty-seven (Entertainment Software Association 2011:2). Future versions of ARIS will undoubtedly make the creation of complex games increasingly possible for the average technologically challenged folklorist.

Ethnographic games further strain the tensions between the ethnographic materials fieldworkers collect and our representation of them in text and media. Jeff Todd Titon, in his essay "Text," from the classic *Eight Words for the Study of Expressive Cultures*, attributes postmodern and post-colonial critiques that emerged in the 1970s and 1980s as the cause for the reconceptualization of ethnography as self-reflexive, experiential, culturally relativistic, and rhetorical in nature. In response to the critiques levied by postmodern theorists searching for a new means of ethnographic representation, Titon suggests: "In a word, the new ethnographic text would be literary" (Titon 2003:83). Titon elaborates about this dilemma for ethnographers:

> How can we write fiction when our aim is truth? In answer I claim that all interpretative texts are literary. All writing is artifice. The ethnographic text is fiction in the root sense (*facio*) that it is a making, not in the sense that it is false. There is a difference between imaginative fiction and ethnographic fiction, of course. The novelist or short story writer is free to invent in ways that the ethnographer is not. The fieldwork-based claim of the ethnographer is "I was there," whereas the novelist's witness is chiefly in his or her imagination. Novels and short stories are made up, invented, whereas ethnographic fiction is made after experience is found out. But if we who author fieldwork-based ethnographic text conceive of our work as rhetorical, literary, and self-reflexive, and so long as we continue to be concerned with issues of representation and authority, then we will write "knowing texts," whose epistemological ground is realized through self-conscious management of point of view to establish the nature of the author's authority and the relation between author, text, character, and reader. (Titon 2003:83)

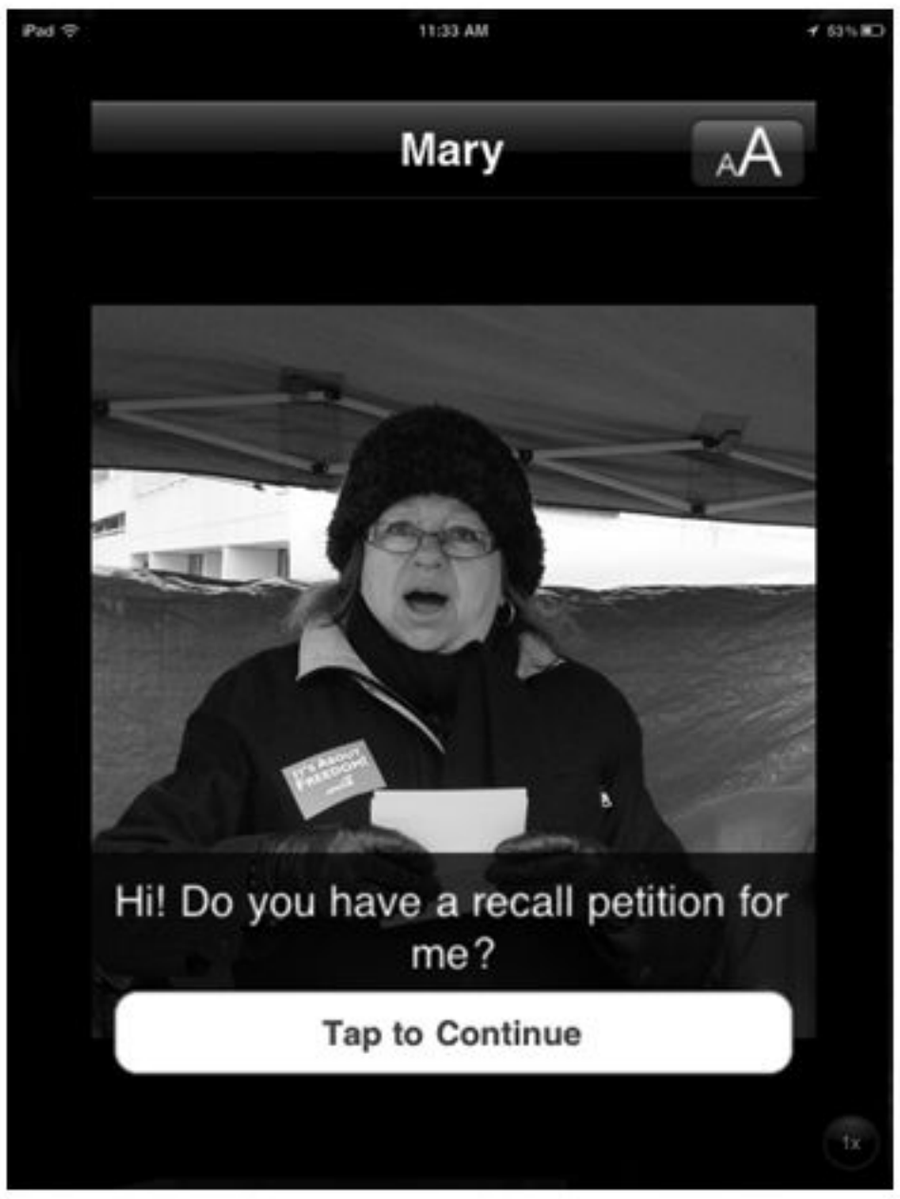
Titon draws from a number of landmark theoretical compilations from the 1980s, including *Writing Culture*, which contains Stephen Tyler's essay "Post-Modern Ethnography: From Document of the Occult to Occult Document." Tyler argues that ethnography is a type of poetics, which has a primary objective to evoke transformation within the reader (1986:125–6), and that the ethnographic text is not an object but "a means, the meditative vehicle for a transcendence of time and place that is not just transcendental but a transcendental return to time and place" (129). If non-fictional ethnographic texts are redefined as artistic, evocative, and transformational representations of reality meant to produce calculated emotional responses in their audience, ethnographic games are even more problematic. Like historical fiction, they reside between what we consider to be fiction and reality, as they dramatize quasi-fictionalized

representations of real events, occasionally sojourning into realistic events that never actually transpired. Facing the dilemma of constructing accurate ethnographic documentation in a plot-driven game, our team opted to preserve a distinction between the traditional historical documentation and the "fictional" game by creating two separate tracks ("WI Uprising Game" and "WI Uprising History") in *Wisconsin Uprising*.

Games offer both profound challenges and enticing rewards for ethnographers. Creating a game requires one to grapple with whether or not to integrate real people or fictionalized characters in a game. Can a fictional game really be considered ethnography, and what is the role of the ethnographer if the events and characters are purely fictionalized? And, if real human subjects are used, one must consider how to integrate fieldwork into the limited screen space of an iPhone. Beyond this, games do not traditionally include the information that ethnographers typically consider to be essential to good documentation, such as photographer credits, extended quotes, and media captions. Constructing a narrative plot that integrates original fieldwork is a challenging exercise in creative representation and demands considerable manipulation of the original context in which the fieldwork was collected. Should the game dialogue contain verbatim transcriptions, compilations of multiple informants into one character, or condensed and fictionalized versions of actual fieldwork? When a game's length restrictions impose artificial parameters on media clips, manipulation of interview content is inevitable. Our team wanted originally to include real characters and our own fieldwork, but found it challenging to fuse interviews and videos into the comprehensible quest-based narrative plot we wanted our game to have. We found that interactivity decreases to a large extent as loyalty to one's fieldwork demands more prescribed interactions, thereby making the greatest asset of the game its greatest limitation: interactivity deeply strains our traditional notions of methodologically sound ethnographic representation. In large part, to create an effective game, the authorial decisions nearly demand the hybridization of fieldwork and fictionalization.

Games do, however, offer an exciting platform by which researchers can present a diversity of voices in an exciting new way. In *Wisconsin Uprising*, players meet a K-12 teacher concerned about the cuts to public education, a nurse concerned about eligibility restrictions to the state health care program BadgerCare, and a pizza delivery worker, tasked with delivering pizza to hungry protesters. The game could further be developed to meet counter-protesting Tea Partiers, IWW members calling for a general strike, or the Capitol Police, whose jobs, unions, and compensation were threatened, yet were commanded at various times to remove protesters by force. Through these different characters, an ethnographer can simultaneously document the events of the Wisconsin Uprising from a variety of differing perspectives. This pluralistic and relativistic representation of a complex event is an effective use of hypertext, which—at least in theory—offers possibilities for non-linear and reader-centered ways to disseminate and process information. In many ways, this hypertext renders a much more accurate multi-authorial narrative of the protests than a conventional omniscient academic one might. Being present at the protests was to be pushed to find clarity in one's own beliefs within a turbulent sea of feelings, ideologies, and political and strategic methods.

Additionally, though the *Wisconsin Uprising* game follows a linear quest, the possibilities for more complex branching narratives based on the players' choices are



Figures 3 and 4. Game image (left): Interactive dialogue, with character "Mary" asking for a petition. Photo: Tom DuBois. Historical tour image (right): Protest cows marching around capitol March 12, 2011. Photo: Tim Frandy.

limitless. The protests themselves were rife with split-second ethical decisions related to crowd management and illegal actions: should I break into the capitol through a window? Should I ignore Tea Partiers or confront them? Should I join a crowd who meets Sarah Palin with the intention of drowning out her speech with chants? Should I tell the angry shouting person next to me to calm down, since he is being broadcast live on Fox News? Do I tell the woman with the "Walker = Hitler" sign that she is hurting the cause? The game platform forces players to critically assess their situation and to make decisions. In turn, players can receive certain rewards or consequences in response to their choices.

Within the game track, one can simulate the decision-making processes that an active participant in the protests grapples with. As folklorists, we claim these choices both reflect and shape our informants' identities. By casting the player into the role of an active participant, rather than a passive and omniscient observer, the player is pressured to discover an identity (whether one's own, or an assumed identity) in terms of a complex and unfolding ethnographic event. Through self-reflection and decision making, one can learn to understand the nuances of a complex historical event more intimately. Furthermore, to create an engaging interactive component to the game, a game-designer must shape ethnographic presentation in terms of representative choices. In the simulation of decision making—crucial within the ongoing process of evaluation and performance of identity and community—one must fabricate alternative realities that never actually transpired, in order to replicate the uncertain ethnographic reality of an historical present.

During the Wisconsin Uprising, for example, individuals' own choices bear immediate impact on the rapidly changing networks of groups and communities. When a

protester is asked by police to vacate an area in front of a blockaded door, that protester must engage in a long line of existential and tactical questions related to individual and group identity. The protester must measure the material risks and rewards of disobedience, and evaluate his or her relationships to dominant and resistant power structures. How a protester conceives of identity will shape the decision, and the decision will re-shape individual and group identity. A protester is likely to *want* a group to have an identity it does not have (for instance, to be more militant than it currently is), and to take tactical steps to cultivate that identity within others. Rather than simply conceive of ethnography as "what happened" and "why," or more aptly "what challenges, factionalizations, and discussions a folk group was having at a specific time and place," gaming highlights the importance of the hypotheticals of the decision-making process in terms of ethnographic representation, as the player actively evaluates what a community was in the past, what it is in the moment, and what it can be in the future. Central in this vision of ethnography is not what *was* done, but rather what *could be* done, and how this crucial dimension of the hypothetical shapes a folk group. A game does not offer the certainties of the seemingly closed-ended narratives that the past pretends to offer us; rather, it offers us the uncertainties of a real present—the unstable ecosystem in which culture, identity, and tradition actually live. Only later will these instabilities and uncertainties of a decision-making process become more statically affixed to broader cultural narratives to produce meanings—the historical task of the representational ethnographer. In this regard, the "fiction" of a decision-based game might be more of an authentic representation of real experience than the representational and linear ethnographic narrative.

The ARIS platform offers exciting possibilities to represent a diverse set of voices and perspectives (even as they evolve through time) belonging to a complex event in an intuitive, seamless, and engaging format. It also offers folklorists a host of intriguing theoretical questions, issues, and debates to consider in the presence of such emerging technologies. We recommend it strongly as a medium for historical tours, for the ethnographic representation of complex folkloric events, or for the documentation of diverse and divergent perspectives within a community. More information about ARIS, including ARIS demos, projects, and technical support is available on the ARIS website, arisgames.org.

References Cited

Entertainment Software Association. 2011. 2011 Sales, Demographic and Usage Data: Essential Facts about the Computer and Video Game Industry. http://www.theesa.com/facts/pdfs/ESA_EF_2011.pdf

Titon, Jeff Todd. 2003. Text. In *Eight Words for the Study of Expressive Culture*, ed. Burt Feintuch, pp. 69–98. Urbana: University of Illinois Press.

Tyler, Stephen A. 1986. Post-Modern Ethnography: From Document of the Occult to Occult Document. In *Writing Culture: The Poetics and Politics of Ethnography*, ed. James Clifford and George E. Marcus, pp. 122–40. Berkeley: University of California Press.