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tell/express stories into account. In our projects with cultural partners, we work to develop an expressive narrative framework for heritage games to account for player agency, including their ability to perform their experiences during play, and to support critical interactions with players/visitors with a nuanced eye toward facilitation. We believe that one should not merely curate games as tools for delivering content. Rather, games, particularly heritage games, must be seen as experiential phenomena and how we facilitate, activate and sustain play with players in mind, is key. Our strategies to enable free play and performance in cultural heritage projects are not intended, then, as uniform or stable, one-size-fits-all, models. We acknowledge with the cases we present that our game designs and the stories they enable are unique from each other. Together they offer complex and nuanced platforms for engagement, particularly in terms of the storytelling and layered narrative affordances they support for young players.

Supporting Inclusive Participation and User-Centered Experience

Anticipating such layered interaction, Nina Simon, in *The Participatory Museum* (2010), argues that visitors must become *cultural participants* in their museum experiences, not *passive consumers*. This requires that museums must become *audience-centered institutions* where visitors are able to “construct their own meanings” and use their voices to “inform and invigorate both project design but public-facing programs” (Simon, “Preface”). Simon reinforces the significance of the shift from the museum visitor to the museum/heritage user, and she lays a foundation for considering how interactive gaming opportunities can support this transformation. Listed among her top five reasons that the general public expresses dissatisfaction for museums is an acknowledgement that for many the “authoritative voice of the institution” is not inclusive for all visitors, particularly in terms of the stories it provides to share heritage and history: “it doesn’t include my view or give me context for what’s presented” (Simon, “Preface”). Furthermore the museum restricts participation and creativity, disallowing personal expression: “the institution is not a creative place where I can express myself and contribute to history, science, and art” (Simon, “Preface”). For Simon, then, and the many that have followed in the decades since the advance of social web technologies in early 2000’s, museums have become platforms for participation, and the role of museum professionals (curators, exhibition designers, pedagogues) is to design collaborative and cooperative experiences to support sustainable interaction.

The role of sustainable interactivity, participation, pedagogy, and user engagement in museums, as well as the challenge of authenticity and education in the face of such change has been well documented in digital museum scholarship (Cameron and Kenderdine, 2007; Din and Hecht, 2007; Holloway-Attaway and Rouse, 2018; Parry 2010; Parry 2013). Ross Parry, museum studies scholar, in particular has documented the pervasive trajectory of technology’s entry into the museum. He declares it now “normative” thus leading museums towards a state of *postdigitality* (Parry 2013). As such, for Parry, technology itself in heritage spaces is no longer unique; instead it is expected and almost required to meet viewer/user demands. In this context, museum visitors not only expect technological intervention, but they hope to be surprised by the

sophisticated experiences they anticipate when engaging with history and historical artifacts. And with the influence of social media, they may even want to add their own content or narrate their personal experiences or reflections on history (through Instagram, Facebook, or on virtual spaces curated by museums themselves). Parry and many others are strongly influenced by André Malraux's concept of the museum without walls, or the *musée imaginaire* (Malraux, 1967). For Malraux, whose focus is on the art museum and of photography as a memory aid, in particular, the infinite capabilities of the dialogic human mind to collect and individually curate through memory great art is far more significant than any specific art collection housed in one location. With photographs as an aid to memory, the remembered collective experience of *all* art that one has encountered can overcome geographical distance and the physical restrictions of any one, specific museum space or gallery. Foreshadowing the Internet and the creation of computational virtual worlds, the Malraux's museum without walls is multidimensional, overcoming space and time constrictions, allowing a place to "dialogue" with artifacts through imagined interaction and personalized storytelling.

Creating Participatory Digital Cultural Heritage Games and Stories

Games and game technologies (both commercial and customized) as well as other forms of virtual interactivity based on storytelling within museum contexts and/or in conjunction with cultural heritage content offer many advantages for visitors. Like museums (both traditional and postdigital), games are established and well documented as media offering participatory, collaborative, and performative narrative platforms to support cultural interventions, explore critical ethical issues and complex histories, and increase social impact (Bogost, 2007; Flanagan 2009; Sicart 2011). The prevalence of heritage games and other digital technologies to support interaction is established enough that there are numerous studies summarizing the state of the use of mobile and digital gaming technologies in the heritage and museum fields (Anderson et al., 2010; Mortara et al., 2014; Paliokis & Sylaiou, 2016; Rhee & Choi, 2015; Shah & Ghazali, 2018). Anderson et al., for example, present a review of hardware, software, and graphics pipeline techniques in use across museums and heritage sites, and reveal how the commercial entertainment games sector has embraced historical content as a valuable genre to engage players with heritage themes. The study also highlights massive multiplayer online game spaces and open sandbox worlds (like Second Life), as well as commercial "historical" war games, as genres that have potential to contribute considerably to public education and experience regarding history and culture.

In this paper, we will describe three projects that represent different and unique ways to combine the ideas of the "participatory museum" with digital game use for heritage to facilitate interactive narrative and storytelling experiences that encourage active participation from children. We have a particular interest in the idea of facilitating, and designing for, contextualized and organized play, or critical play- play structured towards a particular political, aesthetic or social critique or challenge (Flanagan, 2013). Prior research regarding the use of digital heritage games, including Anderson et al.'s and Mortara et al.'s work, tends to focus on the content of the game software itself, to the exclusion of the complex constellation of contexts, processes, and actors that make the use of the

game software possible and that activate narrative agency. Drawing on relevant issues such as cultural heritage, climate change, city planning, and digital literacy, our game experiences encourage citizens (primarily young people and families) to explore their local heritage environments and social issues through organized critical play and with narrative agency at the forefront. We include examples from work with commercial games (such as Minecraft) as well as with original game content developed with museums, libraries, tourism authorities, and universities. Our projects include using customized Minecraft environments created with actual digital geospatial data to engage youth in their communities and learn about heritage, creating games about climate change to explore sustainability, as well as designing Augmented Reality-enhanced picture books and mobile games to explore local cultural heritage and historical sites through storytelling and play. Each of the cases we offer presents a differing level of narrative affordance for players based on the kinds of histories and stories we work to engage.

Background

Games (digital or otherwise) constitute a vast medium of aesthetic expression and meaning-making. In order to properly contextualize our research about using digital games for heritage, this section will provide a brief background and retrospective of how digital games in general are discussed and studied as forms of cultural to support story-driven user experiences. With this background as a foundation, we then discuss the ways in which our projects with digital games exemplify both “conventional” and more novel ways of working with cultural heritage through games.

Digital Games and Narrative Agency

The increasing interest in facilitating more participatory experiences in museums and public spaces, as outlined by the scholarship on the digital and participatory museum, meshes well with the increasing popularity and ubiquity of digital games. While the medium of digital games has been a mainstay in popular culture for several decades, in more recent years, games are much more prominently represented across many cultural sectors, and perhaps most particularly, in youth culture. Not only has the role of games in shaping contemporary culture (from politics, to gender representation, diversity and inclusion, for example) increased, the narrative potential of the medium itself has matured considerably. Digital games are often associated with power fantasy narratives, violent content, adversarial play structures, and perhaps first and foremost different types of military iconography and mastery of gunplay. Undeniably, these types of narratives are still a dominating force in the games landscape. With few exceptions, game franchises that are large enough to reach various venues of public mainstream advertising are “shooters” (e.g., *Call of Duty*, *Battlefield*, *Fortnite*). However, under the surface layer dominated by the ostentatiousness of the action/shooter genre, a considerable variety of narrative expressions and experimental gameplay formats are also evident. For the purposes of this paper, two genres we foreground are what we identify as 1) the “procedural sandbox” genre, and 2) the “emergent gameplay” genre, both connected to narrative forms and agencies. These two genres can be summarized in terms of their storytelling affordances as 1) a loosely defined framework, sometimes locative, that emphasizes player-driven storytelling and 2) a pre-defined narrative platform that still allows for individual agency and creative

expression while conveying stories. Conventionally, games- while they naturally do offer various forms of player agency and interactivity- are still fundamentally structured as author-created content. Game narratives tend to be linear, and follow a pre-designated path as designed by the game's creators. The specific way the player progresses on this path can differ and be open to player manipulation, but they still follow a narrow, preordained framework. Both procedural sandbox and emergent gameplay games offer constraints and attempt to diminish authorial control as much as possible. Instead, the games attempt to present players with a complex system, filled with objects and actors with their own internal properties, that is open to a wide variety of user input and narrative intervention. As users interact with the system, the objects and actors in the virtual environment change, and players can thus gradually mold the world to create a narrative based on their own choices. Notable examples of these types of games are: *Dwarf Fortress*, *The Sims*, *Europa Universalis*, *Cities: Skyline*, and *Kerbal Space Program*. Another important characteristic of these types of games is that they seldom have a clearly defined goal that the players need to achieve to "win," thus the culmination of the game's narrative arch is also up for players to mold to their own liking.

In short, while the interactive nature of games have always been a core topic of researchers' and pundits' praise of games' uniqueness as a medium, the interactivity has only recently started to mean transformative and meaningful engagement with a game's actual narrative structure. Whereas games in earlier decades (with some exceptions, of course), primarily included interaction through players solving puzzles and overcoming other challenges necessary to progress through a linear, pre-written story or branching narrative, contemporary games – with development in new game technologies and aesthetic languages – more commonly allow players to create or fundamentally re-write stories from their own perspectives and experiences. This increasingly nuanced interactivity of game narratives, and what it might mean for cultural heritage work, forms the basis for what we aim to explore in this paper.

Serious Games and Playing with Cultural Heritage

Although the discussions of digital games' potential for museum work and public outreach might feel fairly new, using games for purposes beyond just providing entertainment is not a particularly novel praxis. Research on the potential of games as tools for experiential instruction and cultural engagement also has a relatively long history, and even in early writings digital games were seen as tools that could spark enthusiasm, curiosity, and learning by giving players the opportunity to actively experiment with subjects that were otherwise intangible or prohibitively complex (Malone, 1980). In one major study on serious games and cultural heritage, for example, Mortara et. al. (2014) survey a wide range of serious games used in heritage projects, identifying 51 projects in total, sorted into three broad categories: 1) cultural awareness; 2) historical reconstruction; and 3) heritage awareness. Together these categories are explored with an eye toward identifying how/if games are structured in ways to support intangible cultural heritage (cultural values, artistic expression, social traditions and customs, linguistics, and folklore, for example). The Mortara et al. study is framed as a way to show how, in fact, Serious Games have the greatest potential in this under-represented area, and they conclude by claiming that the *affective domain* (not technical development alone) is needed to facilitate empathy and

personal expression among players with cultural heritage content and contexts (Mortara et al., 43). Furthermore they conclude that collaboration and co-design practices with a range of interdisciplinary domain experts- from game designers and developers, to artists, software experts, and pedagogues- are necessary, and lacking. They conclude that many of the games they review are still often content-driven (filled with authoritative, historical content), and too focused on technical affordances for games, rather than on creating experiential (storytelling) frameworks for participation.

The lack of consideration for creating experience-driven frameworks and social contexts for play is reflected in much of the serious games literature as it implicitly and heavily subscribes to instrumental rationalism; the games themselves are often viewed as the instrument through which instruction and learning is conveyed. As phrased by Carr (2007), researchers sometimes view meaning-making through games as “something that happens to the player through exposure (like a form of radioactivity).” Carr’s critique is specifically directed at scholars who drew overly simplistic conclusions regarding what the games in the *Civilizations* series “mean” to their players, but in our own research, we have found this mindset to be a prevalent theme in studies regarding games in general. For example, in research regarding educational games, making good on games’ educational potential almost exclusively foregrounds the ways in which the game content should be designed to optimize a game’s ability to “radiate” learning (Berg Marklund, 2015).

The content of a game is naturally important and to a certain degree influential when it comes to the types of the more obvious forms of meaning it facilitates. However, this focus on the instrument often happens to the exclusion of understanding the contexts and organizing processes that surround games and which heavily inform activities that construct meanings. In classrooms, teachers are present to contextualize the subject matter, classmates are present to add a social component to the play activity, and the physical space and inherent meaning of the classroom itself also contributes to the ways children play an educational game (Berg Marklund & Alklind-Taylor, 2016). The same is true for play at cultural heritage sites and in museums; the content of the “tool” itself is only a small part of a larger ecosystem of objects, actors, and spaces that affect participants’ meaning-making, and it the curated experience (by visitors and curators) that is needed (Simon 2010).

With this in mind, the description of the cases we include in our discussion about game-based cultural heritage work in the remainder of this paper will be conspicuously imprecise when it comes to specific details of the used game’s content and technical development or design. Instead, we will focus on describing the contexts of use and the orchestration of the activities surrounding the games to support performative, narrative experiences.

Cases

Our work with games and public outreach projects is informed by our research as faculty members within a large games education (500+ students) in Sweden at the University of Skövde. Our Undergraduate games programs include ones focused on Design, Programming, Game Writing, Graphics, Sound and Music, and

students often work in teams to bring interdisciplinary perspectives to their games and to their work with faculty on research projects. We have Masters programs in Serious Games and in Digital Narration: Cultural Heritage and Game Technologies and new Masters programs currently in development including Game Development and Games User Experience. With a dual emphasis on two disciplinary subjects (Informatics and Media Arts, Aesthetics and Narration) divided among our many programs, our games education combines both technical and aesthetic interests. With one of the primary aims of the Game Division to actively engage cultural stakeholders in our research, we use co-design processes with our partners and players to create original digital games and playable media, as well as to design interactions for exploring heritage assets in commercial game environments. Our gaming projects extend much of the current research on museums and cultural heritage contexts over the past decade focused on the evolution of the “digital museum” (where technology is increasingly used) and on the changing relationship between visitors and postdigital museum professionals.

The research presented in this paper revolves around three separate cases that approach cultural heritage and creating experiential contexts for critical play in three distinctly different ways. Mainly, the three game experiences utilize three different methods of conveying narratives. These projects were conducted between 2015-2019, and they utilize three different methods of conveying narratives through games. The first case (*KLUB*) offers an example of games using author-created narratives presented through contemporary AR game technologies to inform participants of local cultural heritage, while also allowing them to play and explore through the constraints of locative stories. The second case (*2030: The Climate Game*) presents an example of games using more player-driven narratives within a predefined narrative framework. And finally the third case (*BSR Cultural Gaming*) presents an example of using games with a very open platform for participation and therefore almost no constructed narrative, other than that of location, to allow participants to create their own stories and express their own cultural values. The authors’ roles in these three projects were as project leads, content developers, and organizers of several public outreach and museum events in which the games were used.

Although the games themselves differ in execution and content, each project follows similar processes and offers similar types of challenges regarding their deployment, strategic design, and use as narrative conveyors of cultural heritage experiences. We argue that these processes of deployment are more important for crafting positive cultural heritage experiences with games than the content of the games themselves, which may or may not be historically accurate or *authentic* if one merely focuses on evaluating the internal properties on the games, seeing them as technical instruments or digital tools.

Case 1: *KLUB* and Pre-Designed Narrative Experiences

With funding provided in two different development phases (from 2015-2018 and 2019-2021), the *KLUB* project (Kira and Luppe’s *Bestiary*, or *KLUB*) is a cultural heritage transmedia storytelling project focused on telling the heritage and local folklore of the Skaraborg region in Western Sweden. As of early 2020, the *KLUB* children’s book series has 14 AR enhanced picture books, each based

on a local municipality in the region, but tied together through a frame narrative designed to connect them through a flexible story world. Blending both historical facts with fantasy creatures and fairytale worlds, and traditional media (books and board games) with digital media (AR, sound, video), along with community activities (book fairs, cosplay, museum exhibitions), KLUB operates on many intra-active affective and narrative registers. The network of media and related activities aims to embody readers/players in heritage progressively and iteratively through performative, personalized storytelling (Holloway-Attaway, 2018). KLUB is included as a sub-project within the larger KASTiS Project (in English the “Cultural Heritage and Game Technologies in Skaraborg” project) and is funded through the region’s municipal and cultural authorities (Skaraborgs Kommunalförbund). KLUB, as with other KASTiS projects, is designed to strengthen the sub-regional cultural infrastructure and promote sustainable growth, digital innovation, and renewal within “experience” industries (heritage, tourism, for example). Focused on young readers and families, the book aims to connect readers to heritage, but also promote reading and digital literacy. As such, the KLUB developers work closely with libraries, schools, and domain experts in cultural heritage and history in a co-design process.

The KLUB series is narrative-driven at its core, and the base story offers tight constraints to manage and lead the participants through the story worlds it constructs. Although it is fanciful, drawing inspiration from Scandinavian and Nordic folklore and fairytales, it is also pedagogical as it offers young readers some knowledge about the traditions, locations, and myths in their local communities. Each book traces and follows a frame narrative that includes many ancient trolls and other mythical beings specific to each book/locale. But it also has other protagonists who recur across all of the books in the series, including an evil circus ringmaster, a troll hunter and researcher, and the lead characters: Kira (a girl-vampire) and Luppe (a boy-werewolf). Through the many interconnected books and tales, Kira and Luppe travel across the region, working to hunt down the mythical beasts who have been captured and held in a circus. Supplemented with the mobile AR application, young readers interact both with figures in the books, bringing characters to life through animated 3D and 2D trigger images, but also on location at heritage sites in the region where they may find the characters on physical signage or by exploring artifacts in the landscape. In this way, readers/users of the books collect characters in their phones and tablets in a customized virtual database, called the Bestiary, but also explore locations on site as they follow the threads of the storyline.

Case 2: 2030: A Climate Game and Play Within a Narrative Framework

The second case is another game developed at the University of Skövde titled *2030: The Climate Game* (hereafter just *2030*). The game was developed in collaboration with The Swedish University of Agricultural Sciences, with the purpose of letting young players experiment to find ways in which local food production in Sweden can be made more sustainable, as well as experiencing the numerous positives and negatives involved in various types of food production processes. In short, the game explores Swedish food, and it aims to cause participants to reflect on their own and their peers’ food choices, Swedish food culture, and conclude how this meaning might benefit or be harmful to the climate. To relate this relatively abstract topic to the participants’ real-world

experiences, the game utilizes important cultural heritage sites and local geography, as the game takes place in a visual representation of Västra Götalands Län in Sweden. *2030* is intended to be played by between 2-4 players in an organized setting with some form of facilitator or guide present. The game itself presents players with a system where they not only need to organize local food production processes to lessen Sweden's reliance on imported goods that can be produced nationally (the transport of which constitute a significant part of our foods' carbon footprints), but they also need to balance productivity with ecologically sustainable practices, as well as the public's fickle interest in different types of foods. In this sense *2030*, as its name suggests, is forward-thinking in its focus on preserving the sometimes intangible forms of Swedish agricultural heritage and production processes, while also considering its regional assets.

Again, the specific content of the game itself is not of particular interest for this paper. Rather, our focus is on balancing player created narratives and on the project's deliberate messaging, as well as the ways in which it attempts to use social interaction outside of the game itself. *2030* presents an approach of persuasive gaming that attempts to balance player agency and a preordained narrative of ecological sustainability and local food culture. The defining features of this game project are the tension between letting players explore the subject matter freely through the open-ended game system, while also ensuring that the actual meaning-making the players are engaged in is accurate and authentic.

A student left to play the game on their own, without the contextualizing objects and relationships present in a classroom environment, can perhaps create- and internalize- narratives that run counter to the game's purpose or are counterfactual. The game, constructed as a narrative framework, does not explicitly give players right or wrong answers. It also does not explicitly evaluate whether or not the player's way of playing is wrong or right. The game intends to give players a space in which to experiment, and then to reflect on the outcomes of their experimentation with guidance and within a context that helps them acquire the necessary subject matter knowledge to understand why their narratives took on the shapes they did.

Case 3: *BSR Cultural Gaming and Players as Cultural Performers*

The Baltic Sea Region (BSR) Cultural Gaming project is focused on developing cross-cultural connections through gaming and gamification in communities across the Baltic Sea to support citizen-driven cultural planning. The research has been supported in two phases with seed funding from the Swedish Institute in Phase 1 (2017-2019) and extended in Phase 2 (2019-2021) with ongoing research supported by the EU Interreg BSR Fund. The project engages citizens, primarily youth, to share stories and experiences connected to their local communities through play activities in Minecraft where they virtually rebuild their familiar neighborhood environments. In a series of community game workshops, players are prompted, with the aid of experts in a range of fields (city planners, architects, museum pedagogues, game researchers, and community planners) to reveal their connections to local heritage and to other social issues and community challenges by reconstructing their worlds in virtual form. A primary purpose of this project, particularly with the gaming components, is to

facilitate discourse around cultural heritage by allowing children to express their own cultural values, and *describe*, through reconstruction, what parts of their own city they feel have cultural value. One primary challenge of traditional city planning and cultural mapping is that often the voices that get to decide how “culture” is defined, and thus what cultural heritage is worth preserving, tend to be held by persons with a high degree of social influence and cultural capital. In this project, we experiment with using virtual environments heavily based on children’s own *active building vocabularies* (expressed through the playful reconstruction of their communities) to see if the cultural values they share become less adherent to *traditional* (i.e., adult) definitions of culture and are instead more personally expressive and creative.

The creation of the game environment consisted of four phases: 1) using realistic geodata from city planners to create low-fidelity representations of cities and neighborhoods in Minecraft; 2) preparing the technology necessary to execute inclusive public outreach workshops; 3) planning and executing the Minecraft workshops themselves; and 4) hosting the community-created Minecraft maps online on publicly available multiplayer servers. However, the important details of this project are not necessarily grounded in the ways in which the game environments were created, but rather in how they were deployed and made accessible to the participants. The project has so far hosted several workshops at a national museum in Karlskrona in southern Sweden, and at a university in Valmiera in central Latvia. In these workshops, the participants were invited to enter large-scale virtual recreations of cities to recreate, restructure, and play in them as they wanted. The participants in the Karlskrona workshops played in a virtual recreation of Karlskrona (a UNESCO World Heritage site) itself, whereas the participants in Valmiera played in a recreation of their neighbouring city Cesis, well known for its historical architecture in the city centre. A total of 300~ children participated in the Karlskrona workshops, which spanned a total of eight days spread out over five months, whereas the Valmiera workshops included 30 children over a more condensed period of two days in a single week. Currently workshops are planned for other communities in Poland, Germany, Latvia, and Finland.

As opposed to the previous cases, this game environment was nearly void of a pre-existing narrative, giving participants a blank slate of sorts (a map outline of their neighborhood) on which to describe (that is to build and play) their communities as they conceptualized and reconstructed them from personal memory. (Maps are of course often vehicles for storytelling and many are rich media forms in themselves that can reveal detailed narratives and histories of place. However, our maps are deliberately *generic* and are intended to be generative and evocative spaces and platforms for storytelling, not stories in themselves.) As such, this project is less about participants learning cultural heritage facts and history as told to them by others, but rather, it is more about participants teaching each other – and us – about their own cultural experiences. The project’s purpose necessitates, then, a more extreme approach to facilitating cultural participation. Whereas our other cases provided some kind of narrative framework in the games and interactions we created, in this case, a pre-constructed story would significantly limit the types of experiences and values

our participants might want to express. With that in mind, we utilized the strengths of the procedural sandbox and emergent gameplay genre, and established a virtual environment in which participants themselves could decide which kind of narrative they would like the environment to embody.

Modeling Cultural Participation in Digital Games

Authored or Participatory Narratives

Different types of narrative interactivity (as exemplified by our three cases) allow for varied kinds of cultural heritage work and public outreach – each with specific benefits and shortcomings. Moving from authorial control to participatory narratives introduces both risk and reward. Authorial control affords facilitators and instructors a certain degree of safety in terms of the meaning-making that might take place when the game is being used. But it may also diminish participants' ability to truly engage in cultural content in ways that are authentic and more personally engaging. Perhaps more importantly, author-controlled narratives severely diminish- or entirely remove- participants' ability to *express* and *enact* culture instead of merely receiving culture and heritage as it is defined by someone else. Thus, different types of games are differently suited to specific forms of cultural heritage work. Author-controlled narrative designs are more suitable for encouraging participants to learn about existing culture through experiential engagement with the subject matter, whereas participant-controlled narratives are suitable for letting participants teach each other about their own culture.

In KLUB, the highly authored environment, based on a strategic and iterative co-design process with a number of actors and stakeholders was appropriate to the large regional development goals that formed the foundation for the project. With a frame narrative in place that was flexible enough to incorporate the many assets and histories we needed to share and activate, we were able to guide the readers/players to the many sites and locales we created (both virtual and physical) by investing them with a richly populated fairytale world to discover. However, the project itself, then, was complex, time-consuming, and required many participants to build and make. In total, we have a 6-year development model, and that will still only form a foundation intended to grow even further. And although the mobile AR application was relatively simple in form with a fairly moderate technical threshold for anyone familiar with a smartphone or tablet (made with local developers and former students from our games education), the experience for interaction, that is the context for storytelling to engage the players, was very rich and detailed. To date, between students, faculty, and other cultural experts and technical developers, we have involved nearly 100 people in the development process (from writers to illustrators and game developers, as well as teachers, librarians, curators, historians, archaeologists, and geologists, for example). So, in author-driven cultural narratives, it is thus important to ensure that the constructed narrative thoroughly integrates people with a high level of familiarity with local cultural heritage in strategic co-design, and this requires many moving parts and people.

As the other two cases utilize increasingly participant-driven narrative experiences, the importance of doing extremely thorough work to ensure an authentic author voice decreases. The role of the author is, after all, either shared with, or completely given over to, the participants. In the case

of 2030, considerable work was done to ensure that the narrative framework in which the participants were allowed to experiment and express their culture as it relates to food and the climate was complete, but no stories were created to personalize characters or create and/or represent important narrative milestones. In the *BSR Cultural Gaming* project, even less time was spent “authoring” the material, and all preparatory time was used to ensure that an environment, virtual Minecraft maps, existed that would be receptive to a wide array of cultural expressions on the part of the participants.

However, although the necessity of authoring narratives decreased in these cases, another type of work emerged that is important to account for. The time spent on fine-tuning authored narratives, instead needed to be spent in creating resources for facilitators so that they could effectively and confidently organize play sessions, and encourage positive meaning-making during game-based cultural activities. Here, we discovered considerable *tension* then when it comes to using participatory narratives. Using participant-driven narratives is a push and a pull. On one hand, the free player expression and experimentation uniquely connects participants to the subject matter through their own crafted narratives; but on the other hand, facilitators often need some contextualizing work to remind or reinforce important facts and realities of the represented cultural heritage subject matter.

Children and Performative Ways of Playing

Important to note for anyone using games for heritage, is that children participate in game-based activities in a wide variety of ways. However, children’s ways of “gaming” are, similar to the orchestration of meaning-making in games, an area of research that regularly takes an overly simplistic, instrument focused, approach to describing an intangible phenomena (play) that is immensely complex in practice. Children are often assumed to approach game content as it is “intended to be played” by the game’s designers. Game content is treated not as information to be processed, but as something in itself that presents a set of affordances to its players, as though game content has a form of inescapable magnetism and players will simply utilize these affordances without a framework to engage.

However, in our experiences in the three cases we present (as well as in our own previous research (Berg Marklund, 2015) children do not just play games; they simultaneously *perform* gaming, and they use the differing game narrative structures as a way to *perform* their own culture. In our experiences with Minecraft in the *BSR Cultural Gaming* project, for example, children did not merely *play Minecraft* as it was intended for widespread commercial use; they used the affordances of Minecraft as a stage to showcase their own knowledge and skills. Games as a medium constitute a shared cultural object, one for which young people often feel a sense of ownership. Further, the expertise with which one can navigate a game space can also carry with it a considerable amount of social status. For many children, this means that gaming is an identity-making and social activity. And while this kind of social component is not unique to digital games- schoolyard play and games fulfill similar roles in children’s social development (Baines & Blatchford, 2011)- digital games might uniquely enhance, or in certain cases exacerbate, the creations and performance of

otherwise intangible and obtuse social structures in new ways.

In game-based work in museum spaces and cultural heritage sites, these social and identity-making performances have immense potential when it comes to creating participatory culture and expressing intangible cultural heritage. Haldrup and Boerenholdt (2015) explicitly identify *heritage-as-performance* perspectives (seeing history tied to emergent social practices and uses) as beneficial, rather than *heritage-as-things* perspectives (seeing the symbolic and authoritative value in collected artifacts and stories). Enabling such performativity within heritage contexts offers powerful new forms for resistance (against postcolonial discourse, for example) to support non-representational processes and practices (such as those emerging from games and play sessions). Following the work of others exploring games for heritage in museum contexts (Katifori et al., 2019; Rivers and Bertoli, 2019), we acknowledge the value of games as an expressive and cooperative medium for heritage engagement and social exchange. In fact, children's performances with/in games often take the form of creating narratives for one another, or expressing an important facet of their own world through gameplay to their peers.

Organising and Arbitrating “Authentic” Performative Play

One particular dilemma recurred several times throughout our work that emphasized the challenges of participant expression, and raised key questions: How does one facilitate individual expression in cultural heritage work while working with sophisticated technical tools that demand structure within structured contexts? Furthermore, how does one orchestrate and arbitrate game-based play sessions in a way that does not infringe on participants' abilities to freely express themselves and use the virtual environment in ways that are authentic to themselves? We believe it is hard to overstate how much work is involved in setting up and using digital games for cultural heritage work, especially if it involves several simultaneous users. An enormous amount of practical work is involved in terms of software and hardware maintenance and logistics. However, the use of digital games also requires a significant amount of social and cultural orchestration. Games are not inherently inclusive spaces, and participants – perhaps especially younger participants – have different capabilities when it comes to navigating game environments and interfaces, and thus they are differently able to partake in game-based activities.

The orchestration of larger scale activities involving digital games can impact the success of the game to facilitate positive forms of social status and identity-making mentioned previously. Without some sort of arbitration or moderating roles in game-based cultural heritage work, there is significant risk that the game environment may quickly shift and cater to the participants who have a high degree of expertise and familiarity with the game. Their status as experts will quickly become well known, and when a small group of participants is seen as authoritative, a game environment- just as any other type of social environment- can quickly become exclusionary. In projects such as our *BSR Cultural Gaming* work, or our *2030* project, dominant voices might quickly quell the type of free expression we hope to encourage with our game-based tools.

We observed this social hierarchy emerging in several of our workshops. Sometimes it had benign effects: one participant would be seen as an expert, and other participants would seek their help with game-related questions or for advice on how to do certain things in the game. In other situations, a competition for social status would lead to participants pushing themselves in interesting creative directions, or it might motivate them to experiment with new things to impress each other. Other times, however, these performances would be more damaging to the participatory environment we wanted to create. Expert participants would exclude certain players from completing activities, or make negative and discouraging comments about others' work. Sometimes they would actively "grief" other players (destroying other players' work, or otherwise distracting or harassing them inside the game) as a way of "performing" their game expertise. As researchers and facilitators of game experiences, we can not deny that a large portion of online game culture takes on an exclusionary, toxic, or arrogant tone, and at times negative behaviors in our workshops would be direct references to these forms of popular personas and anti-social behaviors in online gaming culture.

This begs the question: what is the role of a facilitator in these types of activities? How does one ensure that the activities are inclusive and engaging for *all* participants, while the purpose is to allow participants to also freely express their own cultural experiences? We want to advise facilitators and cultural workers to be aware that there are certain risks and dilemmas one face when conducting participatory game-based cultural work. For us, always having a person present who is knowledgeable about the used game software, and also aware of contemporary online culture, was a large component of being able to catch toxic and exclusionary behaviors early. To effectively moderate sessions, one needs to be able to effectively "read" in-game situations, and this takes a certain degree of interpretation to differentiate between mutually playful interactions between friends and one-sided "griefing" behaviors. Furthermore, a facilitator also needs to be able, to some degree, identify behaviors that carry with them significant meaning for the participants, but might seem benign to an outsider. Younger participants frequently rely on language borrowed from online communities, the semiotics of which can be hard to interpret (cf. Milner, 2013), and facilitators might need some amount of training to understand it.

Conclusion

Digital games offer many desirable benefits for museums and cultural heritage sites as they can offer participants new exciting ways to interact with both new and old cultural entities and objects, and to learn about history and culture through experiential engagement. Digital games, however, constitute a vast range of forms for interactions, and when working with them, one may first consider how different narrative design methods make different types of cultural heritage work possible.

Author-controlled narratives and participant-driven narratives present their own unique challenges. Slightly simplified, author-controlled narratives require a thoroughly collaborative, co-design approach at the forefront of a development project to ensure that the conveyed cultural narrative is both authentic and accurate, but also resonates with participants. In more participant-controlled

narratives, the deployment and use of the digital game represents a larger undertaking, as facilitators both need to support meaning-making through contextualizing activities and materials, but also moderate the game-based activities to ensure that they are inclusive and engaging for all participants. In the *Museums and the Web 2019* conference, Khadraoui (2019) posited that digital tools can play a crucial part in making museums both more culturally relevant and inclusive to diverse forms of expressions and interests of a younger generation. Khadraoui, however, also adds that digital tools, if used without considerable deliberation and reorganization of museums (from staffing demographics to their outreach strategies), will not improve museums, but might instead exacerbate an atmosphere of exclusion. While Khadraoui does not specifically discuss digital games, their statements are applicable here and we would add that the same is true if digital games are to function effectively. Museums need to adapt their work, demographic make-up, and training to be able to use these new tools. These aspects of digital games use need to be further explored and elucidated upon for digital games to become an effective platform for participation that facilitators and cultural heritage workers can confidently add to their repertoire of community engagement methods.

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