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Playful Lenses: Using Twine to Facilitate Open Social Scholarship through Game-based Inquiry, Research, and Scholarly Communication

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Article abstract

In academic contexts, digital games are often studied as texts or are used as pedagogical tools to teach basic concepts in early education situations. Less usefully, their systems and economies are often co-opted and decontextualized in short-sighted attempts to "gamify" various aspects of learning or training. However, given that games are highly controlled, conditional, choice-and-consequence-based, problem-solving environments in which players are expected to interact with simulated settings and elements after agreeing to take on particular roles and subject positions, there are promising potential uses of these experiences in academic contexts that have not been fully considered. Motivated by the imperative to explore alternative modes and methods of scholarly research and communication, and guided by the values of open social scholarship practices, this paper reconsiders games not as things to study, but as instruments to study with. Given that games can function as simulations, models, arguments and creative collaboratories, game-based inquiry can be used as a potential method of post-secondary and post-graduate humanities research and scholarly communication. While these ideas have been explored in a preliminary way in relation to a number of different academic disciplines (Donchin 1995; Boot 2015; Mitgutsch and Weise 2011; Westecott 2011) this paper is meant to catalyse a humanities-calibrated consideration of the pragmatics and potentials of game-based research, games as instances of critical making and scholarly communication, and more complex forms of game-based learning than those currently practiced. A number of examples that make use of the open source Twine platform will be featured.

METHOD

Playful Lenses: Using Twine to Facilitate Open Social Scholarship through Game-based Inquiry, Research, and Scholarly Communication

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In academic contexts, digital games are often studied as texts or are used as pedagogical tools to teach basic concepts in early education situations. Less usefully, their systems and economies are often co-opted and decontextualized in short-sighted attempts to "gamify" various aspects of learning or training. However, given that games are highly controlled, conditional, choice-and-consequence-based, problem-solving environments in which players are expected to interact with simulated settings and elements after agreeing to take on particular roles and subject positions, there are promising potential uses of these experiences in academic contexts that have not been fully considered. Motivated by the imperative to explore alternative modes and methods of scholarly research and communication, and guided by the values of open social scholarship practices, this paper reconsiders games not as things to study, but as instruments to study with. Given that games can function as simulations, models, arguments and creative collaboratories, game-based inquiry can be used as a potential method of post-secondary and post-graduate humanities research and scholarly communication. While these ideas have been explored in a preliminary way in relation to a number of different academic disciplines (Donchin 1995; Boot 2015; Mitgutsch and Weise 2011; Westecott 2011) this paper is meant to catalyse a humanities-calibrated consideration of the pragmatics and potentials of game-based research, games as instances of critical making and scholarly communication, and more complex forms of game-based learning than those currently practiced. A number of examples that make use of the open source Twine platform will be featured.

In academic contexts, digital games are often studied as texts or are used as pedagogical tools to teach basic concepts in early education situations. Less usefully, their systems and economies are often co-opted and decontextualized in short-sighted attempts to 'gamify' various aspects of learning or training.[1] It is no wonder that digital games often appear as a marginal endeavor in digital humanities (DH) practices, despite their relative compatibility with the broad scope of DH methods and perspectives. However, given that games are highly controlled, conditional, choice-and-consequence-based, problem-solving environments

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[1] As Ian Bogost observes in a 2012 commentary titled 'Gamification is Bullshit,' 'gamification is marketing bullshit, invented by consultants as a means to capture the wild, coveted beast that is videogames and to domesticate it for use in the grey, hopeless wasteland of big business' (Bogost 2012). The idea of gamification, whether implemented in business or educational situations, involves 'mistaking incidental properties like points and levels for primary features like interactions with behavioral complexity.' (Bogost 2012). In other words, gamification, like any form of appropriation, decontextualizes and flattens the robust potential of these participatory, interactive experiences into hollow formulae for pragmatically improving performance efficiency. In pedagogical settings, this does not promote critical thinking processes.

in which players are expected to interact with simulated settings and elements after agreeing to take on particular roles and subject positions, there are promising potential uses of these experiences in academic contexts that have not been fully considered.

One of the unique ways that DH provocations and practices have managed to create a critical lucidity is through making—through the construction of prototypes and through discussions regarding alternative models of perception, narrativity, organization, and understanding, enabled through the computer's multimedia frame. DH work often defamiliarizes and repoliticizes the forms and functions of communication and scholarly work, and continues to challenge socially constructed and sustained institutional habits by asking 'What is the relationship between making, thinking, using, and critique?' 'Thinking through' tools, prototypes, interfaces and platforms and through the narratives that such processes and environments construct, DH-inspired experiments are slowly, but noticeably and provocatively, expanding opportunities for scholarly research and communication methods and means. Such changes are the product of an imaginative resistance to traditional limitations and habitual practices in our institutions.

Motivated by the imperative to explore alternative modes and methods of scholarly research and communication, and guided by the values of open social scholarship practices, this paper reconsiders digital games and game-based platforms not as things to study, but as instruments to study with. Given that games can function as simulations, models, arguments, and creative collaboratories, game-based inquiry can be used as a potential method of humanities research and communication. While these ideas have been explored in a preliminary way in relation to a few different academic disciplines (Donchin 1995; Boot 2015; Mitgutsch and Weise 2011; Westecott 2011) this paper will make the case for a humanities-calibrated consideration of the pragmatics and potentials of game-based research, games as instances of critical making, critical intervention and scholarly communication, and more complex forms of game-based learning than those currently practiced.

In proposing that games be used as research and scholarly communication tools in the humanities, we are arguing less about shifting the focus of existing game paradigms and practices to more productive and instructional/educational or institutional ends (as is often done in 'serious game' or 'edutainment' design) and more about challenging textually-dependent scholarship habits with game-based processes while simultaneously challenging conventional game features and functions with scholarly creativity and textual affordances. In other words, we are concerned with renewing the process of scholarly inquiry in the humanities via game creation and experience and are also promoting the idea that developing and playing through games are viable ways of modelling and reflecting on humanities-based research activities. The game examples that we are using to illustrate these ideas demonstrate constructive modes of perception and playful methods of inquiry that foreground critical and creative problem solving through alternative configurations of humanities data. Foregrounding the values of open social scholarship, these unconventional approaches avoid modelling humanities scholarship on more conventional game mechanisms and goals that unproductively foreground acquisition, exploration, and competition.

While 'game' is a broad term that can apply to many different kinds of experiences, most popular forms of game-based experience are limited to competitive acquisition. This view of games is reflected in a definition by Katie Salen and Eric Zimmerman: 'A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome' (2003, 80). However, scholars such as Ian Bogost are reconsidering the flexible opportunities enabled through gamespaces, suggesting that games are interactive, expressive, rule-based systems that do not necessarily involve contest/conflict but which have the potential to engage players in procedural rhetoric.

For the purposes of this discussion, we are attempting to progress beyond the popular notions of games as virtual competition and acquisition engines and focus on their potential as sites which enable exploration and critical engagement with ideas, processes, and data. Games can selectively model systems and can use such modelling as a form of argumentation or critical provocation. Examples such as September 12 (**Figure 1**) and We Become What We Behold (**Figure 2**) use simple, interactive mechanics to invite a participatory critique of politically-charged actions that a player is initially expected to perform without a broader understanding of their implications and consequences.

Games are thus opportunities to insert player-scholars as performative agents within such systems. As players, we can navigate through ideas as environments, curating a particular route through a larger geography while understanding arguments through praxis. While players are sometimes derogatorily perceived as manipulated manipulators who play with and within the limited range of possibilities that game systems allow (rather than changing the systems themselves), game experiences require active, decisive engagement and playful choices that can generate performative habits of critical lucidity and response.
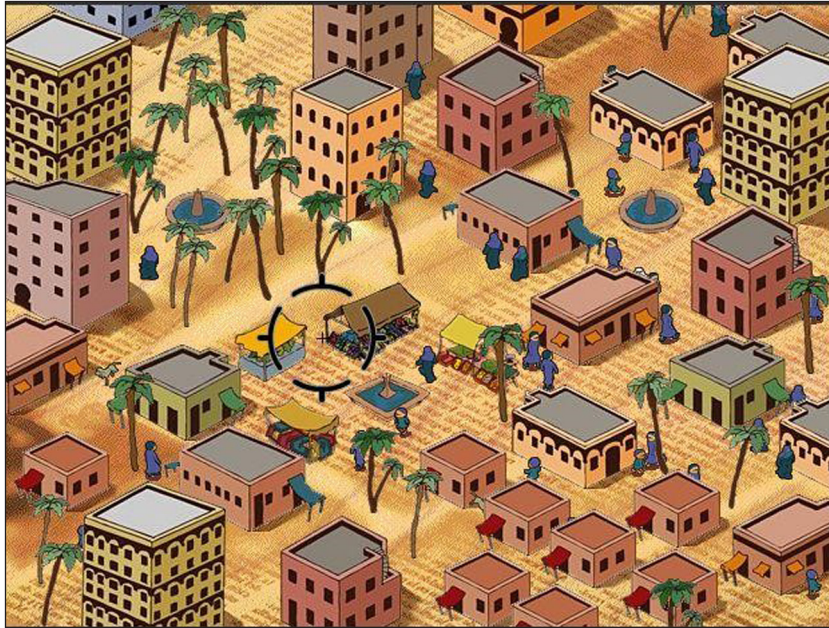
Figure 1: September 12 is a game which demonstrates how easily players can participate in the creation of a problem they are trying to solve. In this case, violence leads to more violence.

Figure 2: In We Become What We Behold, players unintentionally generate and encourage conflict and violence through seemingly innocent social media actions.

Affirming such opportunities for active critical engagement and response (rather than simply reacting to game algorithms towards a reflexive mastery of them) on the part of players, Ian Bogost (2007) in *Persuasive Games* suggests that a game's 'arguments are made not through the construction of words or images, but through the authorship of rules of behavior, the construction of dynamic models' (29). Extending this, Mattie Brice (2014), in a call for provocative game design, asserts that 'games themselves aren't teaching values, rather teaching players to have capacities for certain kind of values through discipline, so we need to design games as prompts for reaction and creation instead of teaching specific parables and lessons' (n.p.)

While there are many types of digital games found on a broad range of hardware and software platforms, finding and making use of appropriately-aligned design software for scholarly work is challenging (Linietsky and Manzur 2016). The learning curve and time commitment for some of the more basic toolkits (such as the open source Godot engine and proprietary Unity engine), along with the imminent potential for near-future obsolescence issues affirms the need for simpler and more accessible but still effective tools (**Figure 3**). As well, many digital game experiences, including increasingly popular Virtual Reality opportunities, feature photo-realistic three-dimensional graphics and highly-detailed game worlds which are designed to immerse players in moment-to-moment dynamics and mechanics. However, such immersive affect is often experienced at the expense of the kinds of careful, reflective engagement associated with critical scholarship. Oddly, then, many of these complex game design engines are used to create complex systems that entertain players, but do not require the players to confront or engage with such complexities directly. Many games, akin to stage magic and movie special effects, are designed to awe and amuse players rather than to provoke
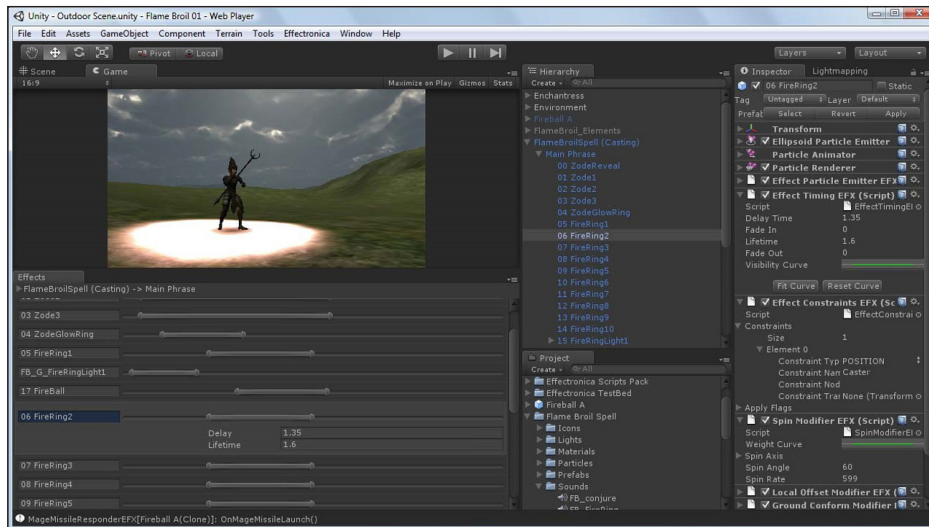
Figure 3: The robust, but complex Unity game design engine.

critical curiosity about and engagement with the intricate systems that they simulate (which is perhaps why game engines feature advanced lighting effects and particle physics simulators, but often fall short when it comes to options relating to modelling social or ethical systems).

This is why we initially gravitated to Twine, which is described by its creators as 'an open-source tool for telling interactive, nonlinear stories' (Klimas et al. 2016). Twine is free, easily accessible software used for designing text-based branching narrative games that are exported as HTML files and hosted online. It requires a minimal knowledge of coding, but can be customised significantly if a designer is well-versed in JavaScript, HTML, and CSS. Twine has an active, diverse, and knowledgeable user base, and many informative guides for development are available online and within the software platform. The main Twine interface relies on a map where panels (called 'passages') that host content can be easily edited and repositioned for visual organization and clarity. Since Twine projects export as HTML files, they are a convenient size to share via email for collaborative projects and to share via the web for broad communities of potential players. The relationship of the Twine platform to earlier hypertext and interactive fiction experiments lends an anachronistic quality to the toolkit and its output, but its simple interface and HTML output, while lacking many of the robust graphical features of its more complex cousins, has proven accessible to a number of independent game designers, to the Queer gaming community, and to other marginalized voices who are using it to create unique, challenging, and unconventional experiences. Twine offers an interactive and branching alternative to linear and spectatorial ways of exploring and presenting ideas (experienced through print and video forms of communication). However, it does this through the combination of familiar words, images, video, and audio, blurring the lines between storytelling and the participatory experience of interacting with a reactive game system. As a result, Twine creations occupy a liminal space between multiple media forms and the expectations of gaming, literary, and filmic cultures of production and consumption. Such non-exclusive accessibility and the ability to include diverse form and content gives this simple platform the potential to challenge often-exclusive scholarly methods and communication strategies as well.

In addition to alternative game experiences such as Zoe Quinn's Depression Quest (2013) (**Figure 4**), which invites players to experience a simulated life with depression; Porpentine's Howling Dogs (2012), a complex and challenging experience that interrogates the relationship between virtual reality and reality; Merrit Kopas' *Videogames for Humans* book (2015), which anthologises the experiences of Twine Game designers playing and commenting on each others' creations, demonstrate the unique ways that Twine is encouraging unique forms of creative and critical work.

Twine can be used to construct environments which ask critical, provocative questions, or which attempt to rhetorically persuade players through interactive experiences and interpellative role-playing. Composing a networked narrative in Twine is akin to constellating ideas, and anticipating narrative networks and multiple pathways through such ideas. This critical mapping process is as important as the selective routing process experienced by players, who trace particular storylines through the environment, realizing, curating, and performing particular forms of an argument.

Twine can perform several different functions as a research tool. The creation of game-based experiences in this software can allow researchers to work their way through processes to explore the consequences of

different choices and variables. Twine provides a format for depicting this process and logically organizing each step. It also can spatialize a text, recreating a textual source into an inhabitable and navigable location that can be interacted with via the play-through feature of the platform.

The Twine platform enables the creation of a complex network of hyperlinks that can be used to explore and understand the connectivity between ideas, concepts, or source materials (**Figure 5**). It can also be used as a presentation tool that augments other forms of scholarly communication (such as a traditional essay format), allowing others to play through a procedurally-constituted argument to reinforce what they've read or heard.

Primarily text-based gaming platforms like Twine also have the potential to be made more accessible for visually impaired players and creators. Theoretically, this software could be used alongside text-to-speech software to generate textually-constituted sites that function as geographical locations to be verbally explored. The software already supports visual modifications to the text through changes in colour and size, and this feature could be expanded to include accessible fonts which would help researchers and players with dyslexia and other learning, processing, and perceptual disabilities.

The specific ways that Twine allows for the integration and organization of data demonstrate its potential as a research tool. The act of inputting textual data, formatting that data, integrating that data with dynamic variables that are affected by a user's actions, and applying other forms of metadata (if required) is both a research and organizational protocol that can allow a researcher to work through their primary material in a unique and comprehensive way. The software necessitates that data be visualized as a map of connectivity (blueprint) that can be studied, manipulated, and edited. Without taking advantage of the play-through feature, this alone can function as mind-map software. The additional ability to occupy and move through
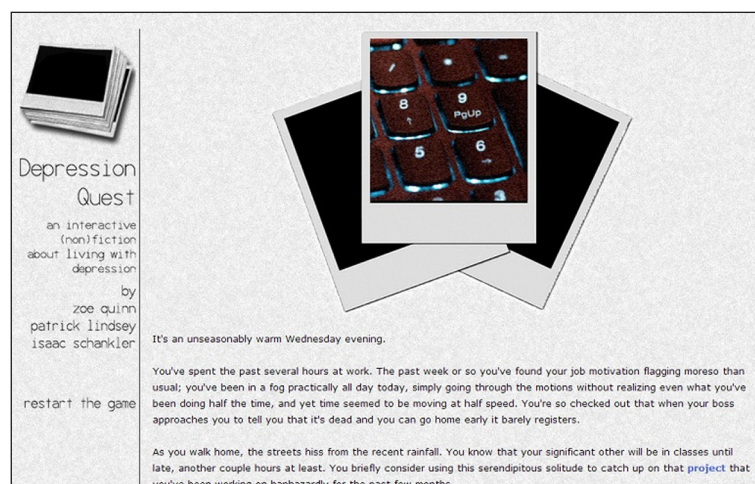
Figure 4: A screenshot from Zoe Quinn's Depression Quest game.
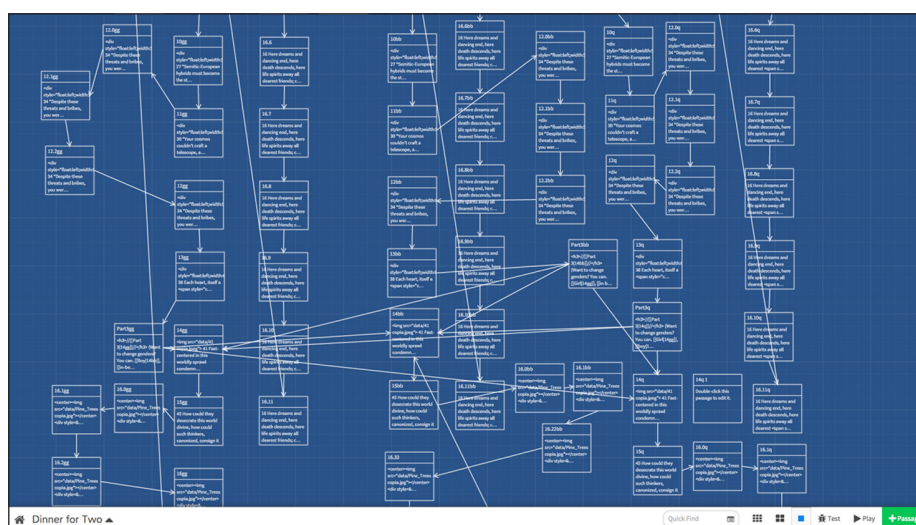
Figure 5: Building in Twine involves customizing and connecting passages that serve as locations, characters or objects in the playable gamespace.

a textually-constituted network of unique locations allows a researcher to examine and explore presented information from multiple perspectives. From a builder's perspective, this content and its connections can also be edited or modified at any point in the process. Twine supports linear and nonlinear narratives, and can also be used to construct several parallel threads. It can also be used to generate a multiple choice play-through experience that can be distributed to others, with the results of each playthrough being collected for statistical or evaluation purposes.

Rebecca Wilson has explored the ways that Twine can be utilized for scholarly research and communication purposes in both English literature and Classics contexts. In early 2016, Wilson experimented with Twine to produce a form of creative scholarship (**Figure 6**) that achieved the following research goals:

1. To better comprehend the relationship between William Blake's creative process, his biographical context, and his prophetic works,
2. To model and critique his complexity through an emulation of Blake's own disregard for temporal and spatial consistency and his transitional unpredictability, and
3. To explore the Twine platform as a site of utopian hope, utopian method, and heterotopic tensions (thus responding to and engaging with theoretical ideas advanced by Michel Foucault (1984) and Ruth Levitas (2013)).

Wilson approached these goals through the method of building the Infinite gamespace and producing a written reflection on her making process (Wilson 2016). However, such a process is markedly different from the resulting game experience in which players role-play as William Blake, interactively negotiating and determining causal links between everyday experiences, inspirational visions and creative invention.

Together, both opportunities demonstrate the variety of ways in which games and game platforms can be used as instruments for research and scholarly communication. As well, given that Twine's output is an HTML file that can be hosted online and accessed through a web browser on multiple devices, Wilson's work is now accessible to a much broader audience than an academic paper on the same topic.

Wilson has since used Twine in other scholarly projects related to Classics research. Classical studies is a discipline that has for a long time relied on traditional scholarly research methods. Archaeology has embraced the potential of digital gamespaces for research purposes more readily, but neither discipline has spent much time considering the practical ways that text-based gaming platforms can be utilized for research tasks. The complex hyperlink networks that platforms such as Twine are able to create can open up new avenues of study that were previously too complex to navigate, and Twine's text-based format avoids many difficulties presented by traditional visual-oriented gaming platforms. The mapping of processes for interactive interrogation and the creation of models are two particular ways in which the Twine platform is useful for generating innovative Classics research.


Figure 6: A selection of screenshots from Wilson's Twine gamespace, in which users play the role of William Blake and navigate between experience and inspiration.

Within both Classics and Archaeology, many tasks deal with the re-creation of ideas, processes, concepts, or locations that can be difficult to physically represent. For some of these tasks, digital simulations have already been used (for example, the DOMUS project (da Silva Martire 2014) by the Laboratory for Roman Provincial Archaeology (LARP-USP) using virtual reality to explore a simulated Roman household) but these have several drawbacks: they are often difficult to create or alter without access to specialized software and technical knowledge, and the process of creating them can be time consuming. Additionally, visual depictions of ancient subjects will always rely on a degree of improvisation to fill in gaps in the primary materials—these may be educated guesses, but they introduce a degree of uncertainty to a depiction. In some cases the primary materials for a simulation might be text-based, and interpreting such text visually can contribute to a distorted visual image. For these reasons, a text-based gaming platform such as Twine provides an attractive solution. The following examples indicate the broad applicability of Twine as a scholarly research and communication tool for Classics and Archaeology.

Example 1: 'Textual Archaeological Imagining'

Inspired by the DOMUS project as reported on by Alex da Silva Martire, Twine can effectively be used to recreate archaeological and historical sites and to realize and share specific approaches to or test hypotheses regarding the functions and importance of such locations. Current efforts to do so via computer software make use of 3D models which are appealing to audiences due to the ease and immediacy of visual presentation. However, many archaeological sites have no material remnants and only exist through textual sources. Therefore, we can practice a form of textual archaeology by recreating these as inhabitable sites in Twine using primary textual materials. An example could be the Domus Aurea (the palatial villa built by Nero in ancient Rome), or another site that is similarly lost to time or that has some puzzling qualities to it (such as the mechanisms to rotate the ceiling in the dining room of the Domus Aurea). To explore the research potential for this kind of work, Wilson has built an early prototype of the Sanctuary of Artemis at Brauron (an archaeological site which still features some visible ruins) in the Twine platform (**Figure 7**). A first-person, text-based exploration of this site has the potential to allow for a greater comprehension of its functional logic. Additionally, cross-referencing the archaeological evidence with the textual evidence reveals areas that have not yet been identified on the actual site (gymnasium, stables) and could indicate potential locations for such areas (simultaneously hosting multiple arguments and theories for comparison). Not only does Wilson's Twine-based rendition of this site using textual evidence (and, where possible, images of current archaeological maps or photographs of the site) generate a multi-modal representation of this ancient structure, but it also employs textual evidence in an experiential environment to extend and theorize possible extensions to existing archeological discoveries.

One of the appeals of working in this text-based platform is the ability to remain within the same medium as primary texts. As so many source materials in Classics are literary expressions, the ability to create "playable," language-based narratives without having to translate the sources into visual depictions avoids the distortion
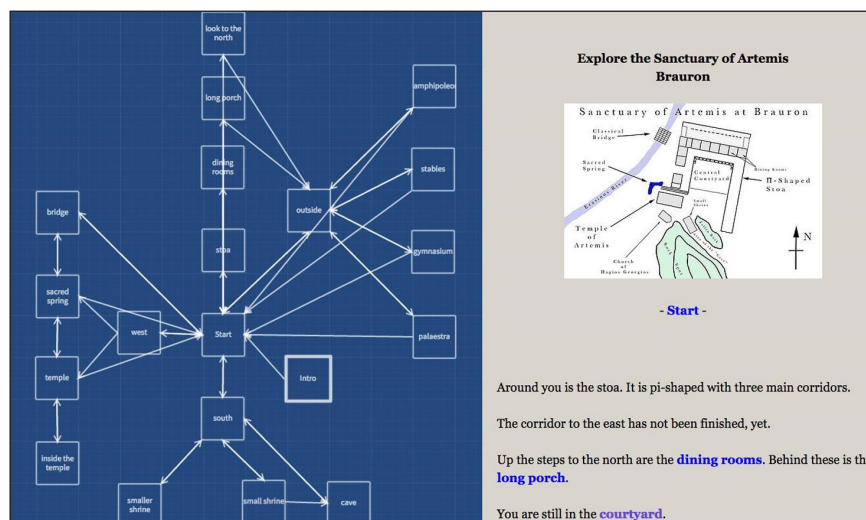
Figure 7: Screenshots from a gamespace exploring the site at Brauron. The panel on the left shows the blueprint organized according to the four cardinal directions, and the panel on the right shows both description and exploration options. An early prototype of this work is here.

and misinterpretation possible from reliance on a traditional gaming platform and graphical re-presentations. While Twine does allow the incorporation of images, they are not a required feature in any project.

Example 2: 'Ritual Recreation'

Religious and magical rituals are difficult to comprehend by simply reading textual documents. Modelling these events in an interactive narrative scenario would provide a more contextual, immersive, and indirectly experiential understanding of the rituals, and is easier than actually re-creating them. These rituals often contain obscure or difficult to obtain ingredients or events, such as the slaughter of animals which would be difficult to safely recreate. While a Twine-based ritual recreation would be limited in its sensory breadth, descriptive language would offer a continual assessment of sight, smell, taste, sound, and touch to comprehensively illustrate the ceremony and perhaps provide some sense of duration. Of course, there would be an element of interpretation for these rituals which would have to be accounted for, justified, and documented, but location and sound parameters could be integrated in the Twine experience to effectively imagine the acoustics related to such practices, for example. As well, the way that Twine represents spaces and events would allow for a broader examination of the setting, location, and relative positioning of elements within these rituals. Such detail would be experienced less directly when reading the linear narratives that constitute existing textual descriptions of the ceremonies. Mapping out ritual spaces could therefore be a prominent aspect of Twine ritual recreation. Wilson has prototyped an example of such a recreation for 'The spell of Pnouthis' (available here) (**Figure 8**).

Finally, if we understand 'Ritual' in a broader sense, religious ceremonies, magical ceremonies, marriages, courts, festivals, theatrical performances, orations, and other events would benefit in the same ways from Twine recreations. Pushing this idea further, we might ask: what kind of industrial practices are there from ancient times that could be better understood or interrogated through such modelling? For example, an experience of Moretum (a widely consumed cheese spread) production could be generated based on the poem about it in the *Appendix Vergiliana*. A Twine recreation could include conjunctions at decision making points, producing a final result based on the choices made. This method of textual visualization (both for the creator and users of such a project) would allow for researchers to consider all the ways that a process could vary, and all the ways that it could go wrong as well. Processes could be altered as new evidence is found. Other processes could include textiles, wine, food, metals, and cement, among others.

Example 3: 'Utopian Rome/Real Rome'

Rome's history has an incredible topographical, social, political, and narrative depth that would benefit from being mapped out through several different—but linked—conceptual layers. A hyperlinked walking tour through the city, or around a significant object or location within the city, can be given additional depth through a rich layering of several historical and literary accounts of this location/object accessed via mouseover or mouseclick macros in Twine. Once this foundation is built, it can be used as a starting point for various forms of critical inquiry (beyond a simple walking tour). For example, a researcher who wishes to determine the utopian quality of each description can use this environment to explore perceptual
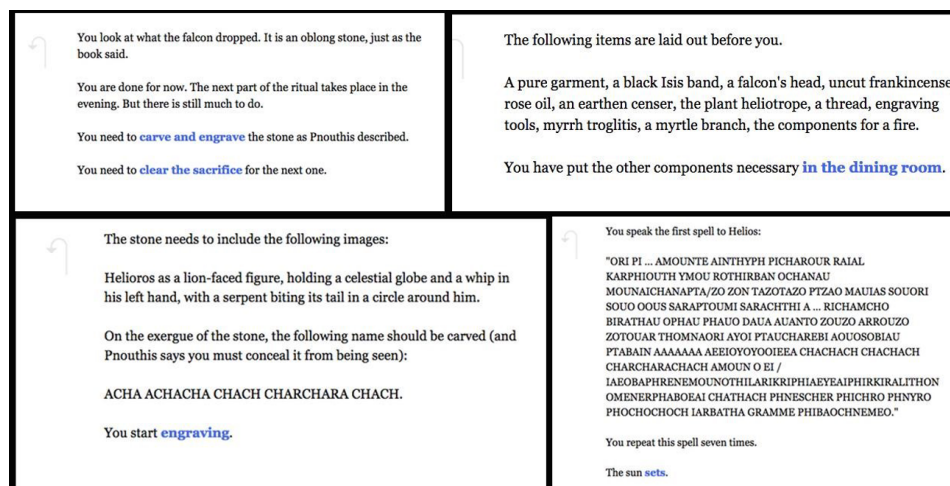

Figure 8: Several panels from Wilson's ritual recreation game prototype. Emphasis is placed on the objects and incantations required according to the primary text.

and tonal changes between different representations, asking: 'Does this determine the cynicism of certain writers towards Rome and the Empire that it symbolizes? Are there any unified or inherited images that are transmitted, preserved, or deformed through time? Do the backgrounds of particular writers (Roman, Greek, other) influence where their accounts of Rome fall on a utopian/dystopian scale?'

Conclusion

Using game-based experiences (generated, in these cases, by the Twine engine) as participatory research and scholarly communication methods, as more than just new media texts to interpret, aligns them with current DH efforts to use computer technology as interventions to challenge, critique, and re-humanize systems, ideologies, and habitual narrativities; to pluralize perspectives, confront complexity, and facilitate multiple models of perception and practice. The computer is a flexible tool that can be used in diverse ways to broaden our understanding of human culture and to generate inclusive, inhabitable, thought-provoking, and branching narrative experiences. The advantage of using Twine to explore particular research and scholarly communication challenges (like those noted in the examples listed above) is that these experiences can be made available to a much broader group of potential users beyond the specialized knowledge communities they are originally designed for. Twine's HTML output means that these gamespaces are web-based, work in any browser, and require minimal hardware resources to experience, making them accessible to audiences whose technological infrastructure might be less robust than many current North American users. Collectively, we need to consciously employ this kind of mechanical extension of perception and action in connective, integrative, and expansive ways to establish the values of open, social scholarship and engage with broad publics.

Competing Interests

The authors have no competing interests to declare.

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