HAL open science

Game not Over: End-User Programming and Game System Modding as Models for Extending Community Engagement

Matthew Wells

▶ To cite this version:

Matthew Wells. Game not Over: End-User Programming and Game System Modding as Models for Extending Community Engagement. ELPUB 2018, Jun 2018, Toronto, Canada. 10.4000/proceedings.elpub.2018.21 . hal-01816719

HAL Id: hal-01816719
https://hal.science/hal-01816719

Submitted on 15 Jun 2018

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Distributed under a Creative Commons Attribution 4.0 International License

Game not Over: End-User Programming and Game System Modding as Models for Extending Community Engagement

Matthew Wells

1 In December of 2016, Microsoft Studios—the game publishing arm of the tech giant—released a software package entitled "Age of Empires II-Rise of the Rajas". This was supplementary content—typically termed an "expansion pack"—for the renowned real-time strategy game Age of Empires II. Releasing additional content in this manner is common in modern commercial gaming as a means to extend a product's shelf life, but Rise of the Rajas was strikingly unusual because the original Age of Empires II had been released all the way back in 1999 (Whitaker, 2016). Expansions are typically released at most a year or two after a game's publication date. But in this case, 17 years had come and gone prior to Rajas' release.

2 What motivated Microsoft to release Rise of the Rajas? It was, in fact, a commercial response to the work of the original game's vital DIY hobbyist game programming community, which had sustained the original Age of Empires II game in part by creating new features for it—that is, new artwork, new scenarios, and even new rules and mechanics, which in gaming circles are collectively called "mods", short for "modifications". Such mods serve to sustain digital games—and, by extension, the digital platforms upon which such games are made—that are considered by their creators to be no longer commercially viable. "Modders" study their chosen platforms intensely, and learn to modify and expand upon them. As well as extending the amount of playtime that such games offer, such practices also serve to foster emergent communities, as modders share their creations with others, and trade tricks and techniques with like-minded creators. As such, these groups serve to disseminate and add to knowledge bases that otherwise would have likely been lost. They also use modding as a means to challenge and subvert the dominant discourses espoused by their games, and to create more inclusive

artefacts that foster closer connections to chosen games and gaming communities. These amateur publishing communities are at the heart of what makes modding culture so vibrant.

3 It is for these reasons that I will advocate in this paper for the study and adoption of these techniques within academic scholarship, and in particular design research, in order to promote sustained engagement with published research findings and designed artefacts. As a recent article on the topic has noted, " 'modifications' have become the creative bridge that's combined developers and fans into one talent-infused organism. Through a set of dedicated amateur programmers and designers, a game can live on when its creators move on to pastures new, or be reborn in a wildly different tangent" (Reseigh-Linconln, 2017). The advantages of bringing such vitality to academic publishing channels are clear—research projects that have technically "ended", due to changes in funding or focus, can be kept going by those that they impact the most. Design projects that address open-ended "wicked" problems can continue to remain relevant through the efforts of those who are directly present to witness and respond to contextual changes that occur over time. Moreover, fostering playful cultures around such problems can engender creative practices that go beyond what is possible via traditional academic research methodologies. And all of this would be centered around sites of digital publication—modding culture is what it is because it is a culture centered around publishing communities.

4 This article will proceed in several stages. First, previous research on modding will be discussed, as well as efforts in the digital humanities to foster online digital cultures. Second, design research will be examined in more detail. Following that, mods and modding practices will be discussed, including the history of modding. Finally, modding as a publishing culture will be explored at length, and connections with academic research and publication will be made. Special attention will be paid to the open source software movement, which offers similar advantages to modding, but fosters different sorts of communities. Open source software is a valuable contribution to design research, but modding offers certain benefits with respect to informality and inclusivity that will be discussed in detail.

Previous Research

5 With respect to existing research on game modding, the work of Hector Postigo and Olli Sotamaa is arguably the most prominent. Building on the work of Henry Jenkins and others on "participatory culture," Postigo takes the position that modders are motivated in large part by a desire to personalize the games they play, stating that they "make games 'their own' by designing unique elements of game play or importing elements from popular or national culture that had some meaning to them personally" (Postigo, 2007, p. 309; see also Jenkins, 2006). Sotamaa builds on this by noting that "further motivations can range from hacking and researching to self-expression and community building" (Sotamaa, 2010, p. 252). Others have linked modding to the emergence of the "prosumer" within neoliberal economies, noting that modders themselves receive little to no compensation for their efforts (Hong, 2013). With respect to end-user development more generally, there are many researchers in the field taking a variety of approaches (see Lieberman, Paternò, and Wulf, 2006). For the purposes of my paper, I will focus in particular on the work of Gerhard Fischer, whose concept of "meta-design" within "open

systems"—that is, the enabling of the user to change the shape and structure of a given piece of software—resonates strongly (see Fischer *et al*., 2004). Fischer has used the example of the SimCity game series as a "closed system" that restrict its potential capacity to be used as a tool for experimentation and adaptation by the user (Fischer and Scharff, 2000).

6 Within academia, there have also been serious and considered moves towards experimentation within digital spaces, meaning that there is a pre-existing context for the acceptance and application of game modes. Scholars in the digital humanities, for example, have been experimenting with online academic projects for some time. Among the most ambitious sites for such work in the Speculative Computing Laboratory (SpecLab), founded by Joanna Drucker and Jerome McGann at the University of Chicago. One of the primary goals of SpecLab has been to expose the rigidity of digital knowledge forms, but also to pair that rigidity with the subjectivity of humanities-based academic research in a way that emphasized the interpretive qualities of both elements. As Drucker notes, "the single most important challenge we gave ourselves in SpecLab was to design representations that modeled subjectivity within knowledge production," adding that "making visible these subjective acts of interpretation, and the role of imaginative play, served to challenge the authority claims of formal logical systems" (Drucker, 2009, p. xiv).

7 Among the most prominent of SpecLab's projects was the collaborative game Ivanhoe, which operated by taking existing literary works and encouraging players to play with them via in-character amendments to the existing texts. Ivanhoe operates by players making moves, each of which adds new information to a chosen work. As Sansing explains it, "you can make a move by writing what happens before the story begins, or by writing what happens after the story ends, or by writing about something that happens during the story out of sight of its readers, or completely outside the scope of the book" (Sansing, 2003, p. 45). As such, "you can add to the story by writing a new passage or chapter about characters or actions that the original author did not include in the book, or you can add to the work's historical context by playing outside its covers" (Sansing, 2003, p. 45). Drucker explains the reasoning behind this design as follows:

> Ivanhoe was meant as an imaginative, provocative space that would move beyond instrumental management and statistical processing of text-based materials. It was designed in response to the question of how the future of literary and humanities scholarship might be provoked by electronic instruments, and on what foundations adequate tools could be established (Drucker, 2009, p. 66).

8 Despite its unorthodox approach to textual interpretation—or perhaps because of it—Ivanhoe offered a model that could have appealed to game players outside of its original focus on those with knowledge of canonical literary texts. The game's scope could have been expanded to the point that it became its own discursive framework, as Rockwell observes:

> Ivanhoe could become not one game, but a framework for the implementation and playing of a class of text based games of deformance. A framework or toy with which we can play games of learning and collaboration. A framework that would provide another starting point for games of criticism (Rockwell, 2003, p. 93).

9 Despite its promise, however, Ivanhoe has since been shut down, and is no longer available online. Its impermanence is, arguably, a symptom of a larger problem with respect to online academic publishing that will be discussed in more detail later in this article.

Design Research

10 The work outlined here is grounded in longstanding efforts to promote an increased focus on design as a research tool, and to connect with "users" of such research via collaborative design efforts. As noted by Margolin, design research emerged in the 1960s and 1970s in the United Kingdom and the United States, through the efforts of scholars within the disciplines of engineering and architecture such as Bruce Archer, John Chris Jones, and Horst Rittel, with Christopher Alexander also emerging as a prominent figure (Margolin, 2010). But with the advent of interactive digital computing technologies—and wide consumer application of such technologies, beginning (arguably) in the 1980s and 1990s—it assumed a new prominence within business and academia. It should be noted that interactive computing had emerged long before concerns over the aesthetics and efficacy of interfaces were raised. When the first systems were conceived of and developed in the mid-1960s—first at Cambridge, Massachusetts tech firm Bolt, Beranek, and Newman, and soon after that at MIT—the once-familiar command prompt was the only feasible way to facilitate user interactivity via print-based teletype machines (Wells, 2017). In the 1970s, researchers at Xerox's Palo Alto Research Centre (PARC) launched the first major efforts towards graphical user interfaces within operating systems and related applications, though it was not until Apple adopted PARC's ideas for the operating system of their Macintosh line of personal computers in the 1980s that GUIs entered the consumer market in a major way, and it was not until the 1990s, with the rise of Microsoft Windows, that the command prompt began to lose its prominence (Wells, 2017). As such, even the most concerted and longstanding research efforts in human-computer interaction (HCI) have a relatively short pedigree.

11 The arguments, however, for focusing such efforts on design are strong. As scholars in the area have noted, "when researchers actually construct something, they find problems and discover things that would otherwise go unnoticed. These observations unleash wisdom, countering a typical academic tendency to value thinking and discourse over doing" (Koskinen *et al.*, 2011, p. 2). Yet it has also been recognized that the benefits of design research increase when such efforts are taken outside the academy. As Gerald Fischer and Elisa Giaccardi, two of the more active computer scientists in this area, have argued, "the diverse and collective stock of scientific content and artistic or stylistic ideas that individuals and communities share, reinterpret, and use as a basis for new ideas and visions constitutes the vital source of invention and creativity" (Fischer and Giaccardi, 2007, p. 28). Beyond tapping outside talent, Fischer has also discussed how design problems are not static, and that public engagement is necessary in order to sustain successful design efforts, noting that "design projects and designed artifacts, given the nature of their context (wicked problems, change, unique characteristics, and multiple stakeholders) often evolve over long periods of time" (Fischer, 2001, p. 1). He is speaking here about design more generally—his background in computer science lends itself to an approach that focuses on software engineering, which has a strong corporate focus—but Fischer has participated in more scholarly design research project within the context of enabling creative problem-solving within communitarian contexts (Fischer, 2001; see also Fischer, 1994, for work more singularly focused on software engineering).

12 Modding also resonates with the "cultural probes" approach to research in the field of human-computer interaction (HCI), and in fact may serve as an effective approach to

probe-based research in HCI. Cultural probes have their roots in research at the Royal College of Art in London, specifically in their program of Computer-Related Design (Koskinen *et al.*, 2011). Researchers Bill Gaver, Tony Dunne, and Elena Pacenti launched the Presence Project in the 1990s with the aim of deepening the engagement of elderly populations with their local communities (Gaver, Dunne, and Pacenti, 1999). But it was their unique approach to their work that is relevant here. As they explained, "We used other techniques from groups such as Dada, the Surrealists, and more contemporary artists in the probes as well," including, crucially, the situationists (Gaver, Dunne, and Pacenti, 1999, p. 26). As noted elsewhere (in relation to the Presence Project), "the situationists tried to create situations that lead people to places and thoughts that they do not visit habitually through dérive (roughly, drift) and détournement (roughly, turnabout)" (Koskinen *et al.*, 2011, p. 91). The probes approach was subsequently adopted in HCI research; as scholars in the area have noted, "since the initial publication of cultural probes in interactions, the use of probes has proliferated widely in the HCI community" (Boehner *et al.*, 2007, p. 1078). Such practices are playful in nature, in the sense that they are meant to present novel ideas and artifacts to audiences in unexpected, and at times seemingly nonsensical, ways and means. The "messageProbe" project, for example, which was meant to facilitate communication amongst family members, also unintentionally introduced a novel space for family play:

> Another conclusion that became clear after the deployment...is that families want to have fun together, even at a distance. With the messageProbe, we saw tic-tac-toe boards, connect-the-dots games, and family member caricatures, all bringing family members from different households into shared, playful activities (Hutchinson et al., 2003).

13 This is all important with respect to modding because some of the most successful mods are those that introduce absurdities into normally restrained game spaces, as will be discussed below.

Mods and Modding

14 A mod, quite broadly, is any modification made to an existing digital game, no matter how slight. More specifically, mods are generally recognized only if they are made by game players and other users, as opposed to professional developers, though developers occasionally elect to adopt modding practices as well, as described in the introduction. Mods generally are free to use, and in fact attempts to commercialize them have been met with fierce resistance—the popular online game portal Steam had to abandon plans to create a retail modding storefront in the wake of such opposition (McWhertor, 2015). Modding has its roots in the game "cracking" subculture of the 1980s, in which users of games for such "home" computers as the Commodore 64 and Sinclair ZX Spectrum would hack into the source code of popular games, in part to remove their internal copyright infrastructures so they could be freely distributed (Reseigh-Linconln, 2017). Cracking was largely legitimized with the 1993 release of Doom, a landmark title which popularized the "first-person shooter" genre which is dominant in the industry today. Apart from its graphics and gameplay, what made Doom unique was the fact that its developers released to the public the tools which they used to design the game itself, including graphics editors and level editors. Such inclusions transformed many crackers into modders, as "rather than having to crack a game open...modders were given everything they could

possibly need to slightly adjust or completely overhaul their new favorite shooter" (Reseigh-Linconln, 2017).

15 The popularity of modding has surged over the past decade or so, and developers have responded by releasing even more powerful gaming tools. A key element of such tools is the Lua scripting language. Developed in 1993 by computer scientists in Rio de Janeiro, Lua, has seen widespread adoption as a clear, concise medium with which to code game infrastructures and mechanics. As the author of a Lua reference book puts it, "Lua is easy to learn; the syntax is simple and clear. One can read and understand small Lua scripts without knowing anything about the language," and as such "it is possible to use Lua as a [scripting] language for configuration files that can be edited by people who don't know anything about programming" (Emmerich, 2009, p. 1). While a knowledge of programming certainly helps when it comes to working with Lua, it can also serve as an effective teaching language, and as such has helped many modders become proficient in more sophisticated techniques by which to modify and extend their games.

16 Just as important as the mods themselves are the online communities that have grown up around the more popular modded games. One of the most vibrant of these communities, particularly with respect to the age of the games it focuses on, is the website Simtropolis. Originally created in 2002, Simtropolis states that it is "a community dedicated to the SimCity series, Cities: Skylines and other city-building games" (https://community.simtropolis.com), but currently its users tend to concentrate of SimCity 4, the sprawling, feature-rich 2003 version of the popular city-building series (the 2013 release of a new version of SimCity was such a spectacular failure that it essentially killed the franchise, so the vast majority of modders have stuck to the 2003 version). Its community pages are packed with mods that generally expand on the game, adding new building types, new transportation infrastructures, new landscapes, new game mechanics, and virtually countless other types of additional features. The crown jewel in its vast database in the "Network Addon Mod" (NAM), a huge package of mods that focuses primarily on new transportation options, as explained in a 2014 PC Gamer article (the NAM has been revised many times since):

> The Network Addon Mod is all about giving you options—tons of options—on how to thoughtfully and efficiently design your city's transportation system. Some of the elements it adds are major, like massive highway systems, high speed rail, and working canals, and some are small, like turning lanes, nicer curved roads, and elevated pedestrian walkways (Livingston, 2014).

17 Simtropolis and websites like it are vital elements in terms of sustaining modding communities and ecosystems, a point that will be revisited soon.

18 Modding is an ideal template for collaborative design research precisely because it encourages continued reflection on a design artifact, and enables all parties invested in a design artifact to continue the design process using an approach that is simultaneously personal and public. Mods are personal in the sense that they typically reflect individual interpretations of a given artifact but are also made to generate reactions from other players. The creation of a new asset based on a character from another, favoured media source, for example, indicates a personal preference for that media source, but it typically also meant to generate a positive reaction from other players who are also fans. These interpersonal practices can feed back into the design research process, creating a mutually beneficial shared space:

19 When designers work as facilitators rather than detached observers, the last remnants of the idea that researchers ought to be detached, impartial observers—"flies on the wall"—disappear. What comes about is the idea that design is supposed to be an exploration people do together, and the design process should reflect that (Koskinen et al., 2011, p. 83).

20 The subjective and personal nature of modding will be discussed in more detail in the next section.

Publication: Modeling Informality and Inclusivity

21 Design research projects have been published and presented via familiar outlets such as academic journals and conferences, but other, possibly more effective channels have been suggested and promoted. This is particularly true (arguably) with digital design projects, where online platforms can readily offer functionality that goes beyond the display of text and images. Arguably the most ambitious move in this direction comes in the form of "webtexts", advocated primarily by scholars Cheryl Ball and Douglas Eyman. Webtexts move beyond the scholarly preference for text and simple by images by embracing a wider range of the affordances on offer within digital spaces:

> Webtexts are multimedia-rich, digital, screen-based texts designed to enact an author's scholarly argument. Webtexts, in which authors design their argument using linked webpages or database-driven platforms, animations, images, audio, video, scripts, programming languages, and written text, can be equivalent in intellectual scope to an article or a book (Ball and Eyman, 2015).

22 As DeVoss, Cushman, and Grabill (whom Ball and Eyman cite) explain from a pedagogical perspective, contextual discourses can lock in certain expectations with respect to the composition of digital artefacts, but that does not mean we should be constrained by such expectations:

> Writing within digital spaces occurs within a matrix of local and more global policies, standards, and practices. These variables often emerge as visible and at times invisible statements about what types of work are possible and valuable... If students are to be effective and critical new-media composers, they should be equipped with ways in which they can consider and push at practices and standards in strategic ways (DeVoss, Cushman, and Grabill, 2005, p. 16).

23 Though webtexts need not relate specifically to design research, design is a primary focus in their design—that is, "webtext authors embrace design so that the conceptual model they use is relevant to the text's purpose and media"—so this aspect emerges implicitly, if not explicitly (Eyman and Ball, 2014, p. 115).

24 Webtexts show some promise, but there are issues with the paradigm. Perhaps the primary problem is usability. While venues such as Kairos encourage a diversity of approaches to webtext publication, issues arise when the platforms designed for such texts are difficult to parse, and, more problematically, when they degrade over time. This latter issue is particularly true with older works, which have tended to "shrink" in size as the resolutions of computer screens have increased. The emergence of mobile "smartphones" and tablet computers as popular means to access online media has also rendered certain webtexts inoperable to many potential users, as technologies such as Flash are not supported on most devices. Without a solid grounding in HCI, moreover, many webtexts are difficult to penetrate without a good deal of experimentation. While

that might be an end goal in and of itself with respect to the author's intentions, the fact remains that, with such a vast amount of online content available (academic or otherwise), inscrutable webtexts may simply be passed over.

25 A potential alternative model for design research is the open-source software development model, in which users work as a (typically distributed) team to develop and refine a given software artifact. Open-source also centralized platforms such as Github, and formal mechanisms to connect contributors and their code to larger projects. Yet the open-source model is far from perfect, and advocate David Hurley has identified the following major "challenges" with the paradigm (Hurley, 2014):

- More contributors means more risk
- Establishing coding standards
- Accepting a common license
- Implementing peer review
- More contributors means less security
- Shared vision
- Personal ethics
- More contributors means less programs
- Defining tasks
- Listen and focus

26 It is beyond the scope of this article to examine each point in detail, but commonalities may be summarized. Essentially, the problems Hurley identifies come down to managing a disaparte group of individuals contribuing to a single project. Concerns over project cohesiveness, shared standards and beliefs, and distributed motivation inevitably arise. When conflicts arise, as blogger Chris Hoffman has observed, the end result is that "internal drama begets forks, forks, and more forks," meaning that the central project is splintered into multiple associated projects, thereby destroying the centrality that makes open-source so attractive in the first place (Hoffman, 2017). Moreover, the more popular an open-source project becomes, the more acute these problems become, with the typicaly result being that organizations with little to no interest in full community involved take charge.

27 Game modding works much differently from this model, the key difference being its inherent decentralized structure. Modding is not about developing a central project because that central project is already completed, or at least its continued development is not controlled by modders. This appears to be an imbalanced situation, but that is only assessing the situation from one perspective. From the perspective of the project publisher, agency is distributed, in the sense that a published artefact is produced, but is also inherently extensible and modifiable. Removed from the need of having to develop this artefact themselves, modders can and do play with the artefact in unique and interesting ways. Its content and/or aestheitc are often subverted, a playful response that is difficult to establish in open source contexts. Alternative and antithetical visions flourish in modding cultures, often in unexpected ways—the strictly single player game *Half-Life*, released by Valve in 1998, was quickly modded into *Counter-Strike*, which was eventually released commercially and is now one of the most successful multiplayer game series in existence.

28 In terms of publishing platforms, modding cultures rely largely on older web technologies such as message boards—while seeminly a questionable approach to imitate, there are advantages that will be discussed shortly. However, the website Simtropolis, which has

already been discussed briefly, is worth revisiting here to analyze its structure and format in more detail. Simtropolis is organized around several categories, each with its own "tab" that is displayed near the top of each page. Each tab links to a specific category of fan-created content—the first, and perhaps most important, lesson for academic publishers is that almost all of the content on the site is created by the users themselves. Yet this content is organized around several information "hubs"—specifically, the city-building games that the site caters to—providing the necessary constraints for creative output (Stokes, 2005). Among the categories of content are "fan art" creations such as city "journals"—replete with images and descriptive text—and custom-made maps. Such media are important elements of fan culture, though they differ from mods in the sense that they reflect interactions with games as they exist in their initial commercial state. As practices, they resemble in character the comments that may be appended to certain types of online articles (academic or otherwise), in the sense that they result from engagements with pre-existing media texts.

29 The tab "ST Exchange" leads to the content page for game mods, and is thus of primary concern here. The Exchange provides links to all of the mods available on the site. As there are over 19,000 such mods for SimCity 4 alone, however, such access must be managed. As such, the front page of the Exchange displays only a grid of featured mods, which rotate in and out on a regular basis. Each row of the grid encompasses a different category of content. The first displays "featured" mods, including the NAM mod discussed above; this is the only permanent fixture on the main page. The next row, labeled "What's New", shows new mods that have been uploaded to the Simtropolis database. The next row, "Highest Rated", is an important one, in that it reflects a means by which the modding community itself can feed back into the system. Using a typical five-star rating system, users are able to score the mods they download and use based on their opinions of them; these scores are then averaged to create the overall ratings. Popular mods (in terms of downloads) are then listed, and mods are subsequently subdivided in other ways below. All of this fosters a culture in which featured content in fluid, and useful and effective mods are given the most attention.

30 None of this technology is particularly cutting-edge of course, but it also reflects the informality of modding cultures. The most important aspect of such community sites is the ease with which they may be constructed. Message board software is generally free, and simple to set up. While version control software such as Git, which is used to control open-source projects, is generally also free, its setup and administration is much more complicated. Message board are not only easier to operate, they can be freely hosted on a number of specialty websites such as ProBoards (https://www.proboards.com/). Sites such as Simtropolis often begin on such free hosting sites before migrating to their own web servers and URLs. This DIY approach to community building is an important hallmark of modding culture. While modding hubs do not have the sophistication of sites such as Github, they foster levels of individual agency over communication and distribution infrastructures that often gets lost in larger open-source projects.

31 This DIY informality also fosters what is perhaps modding's most important quality—its potential to subvert, challenge, and supplement dominant social, cultural, and political discourses. In Bethesda Softworks' 2015 release *Fallout 4*, the game begins with the player cast as a husband in a typical heterosexual relationship in a nuclear family. Soon after the release, however, a fan modded the game so that the opening dialogue implied that the player was in a same-sex relationship with his spouse, provoking a backlash that served

to highlight the challenge to dominant Western domestic discourses that the mod offered (Gohl, 2016). In 2013, game designer Mike Mika famously modded the Nintendo Entertainment System version of Donkey Kong for his daughter to make Pauline, the female character in the game, the hero, as opposed to the object of rescue (Mika, 2013). Modding cultures are full of examples of such endeavours to swap and subvert traditional gaming (and societal) roles, and to make games more reflective of the diverse audiences that play them. Such efforts at inclusivity allow modders to more closely connect with their games, and to larger gaming communities.

32 How does this all translate to the academic realm? One could imagine a similar content hub serving as an academic publishing site. Despite the benefits of collaborative design research as described in the previous section, there is as of yet little to no discussion as to how the efforts of users could be published in a manner that puts their work in equal standing with the original design research. Instead, users are stripped of their agency within traditional academic publishing outlets, as the researchers themselves describe projects on their own terms in articles and associated media. A modding forum, on the other hand, has the potential to turn user contributions into "first-order" content, created by the users themselves and standing equally with the scholarly materials they support and extend. In addition to the mods themselves, users of websites such as Simtropolis are given space to describe their creations, provide screenshots of their work in action, and link to dependent files, creating complete and robust contributions to the overall project of extending a given game. Sites such as Simtropolis also carry the advantage that they are built out of pre-existing, and often free and open-source, components. This carries an important advantage over webtexts, which tend to be user-created, and thus difficult to modify and extend when necessary. Both platform and content thus work in tandem, serving to nurture a community and expand the reach and power of the works it focuses on.

Conclusion: Coded Communities

33 While the benefits of modding and modding communities to academic research have been outlined here, issues surrounding the fostering of new digital publishing practices should not be ignored. In particular, it is necessary to be mindful of the fact that digital platforms are created from code, and as such the affordances of these platforms are pre-determined, or "baked in", by developers. As Kitchin and Dodge have noted, "the freedom to participate and do certain kinds of work only exists if an application's underlying calculative algorithms and communicative protocols are encoded to support such actions" (Kitchin and Dodge, 2011, p. 133). Platforms with built-in limitations would in theory limit what modding communities are able to do. As already noted, however, leading platforms are generally built out of familiar components, such as pre-existing message board software, and thus have been tested and extended over time. Yet this is still not a concern to take lightly, particularly as academic research projects would likely have requirements that would be unfamiliar to game modders. In a sense, platform development would, or should, be as open as research modding itself, inviting feedback from the communities they serve. It is this focus on community that should never waver, moreover. Publication can often be thought of as a closed process, in the sense that it may be understood to be the creation of finished products. The digital realm, however, opens up new possibilities for open-ended and extensible publishing practices. Research

modding should thus be seen as a natural outcome of changing publishing practices, as opposed to an awkward outsider, as it leans towards the goals many researchers currently share with respect to the possibilities inherent in digital publication spaces.

BIBLIOGRAPHY

References

Ball, C. E., and Eyman, D. (2015). "Editorial workflows for multimedia-rich scholarship." *JEP: the journal of electronic publishing*, *18*(4). Retrieved from https://quod.lib.umich.edu/j/jep/3336451.0018.406?view=text;rgn=main

Boehner, K., Vertesi, J., Sengers, P., and Dourish, P. (2007). "How HCI interprets the probes." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1077–1086. New York: Association for Computing Machinery.

DeVoss, D. N., Cushman, E., Grabill, J. T. (2005). "Infrastructure and composing: the when of new-media writing." *College Composition and Communication*, *57*(1): 14–44.

Drucker, J. (2009). *SpecLab: digital aesthetics and projects in speculative computing*. Chicago: The University of Chicago Press.

Emmerich, P. (2009). *Beginning Lua with World of Warcraft add-ons*. Berkeley, CA: Apress.

Fischer, G. (1994). "Domain-oriented design environments." *Automated Software Engineering*, *1*(2): 177–229.

Fischer, G. (2001). "Communities of interest: Learning through the interaction of multiple knowledge systems." In *Proceedings of the 24th Information Systems Research Seminar in Scandinavia*, 1–14. Bergen, Norway: Department of Information Science, University of Bergen.

Fischer, G. and Giaccardi, E. (2007) "Sustaining social creativity." *Communications of the ACM*, *50* (12): 28-29.

Fischer, G., and Scharff, E. (2000). "Meta-design: design for designers." In D. Boyarski, and W. A. Kellogg (Eds.), *DIS'00 Proceedings of the 3rd Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques*, 396–405. New York: Association for Computing Machinery.

Fischer, G., Giaccardi, E., Ye, Y., Sutcliffe, A. G., & Mehandjiev, N. (2004). "Meta-design: a manifesto for end-user development." *Communications of the ACM*, *47*(9): 33–37.

Gaver, W., Dunne, T., and Pacenti, E. (1999). "Design: cultural probes." *Interactions*, *6*(1): 21–29.

Gohl, C. (2016). "Fallout 4's 'LGBT Family' mod sparks death threats." *Newnownext*. Retrieved from http://www.newnownext.com/fallout-video-game-mod-death-threats/07/2016/

Hoffman, C. (2017). "The downsides of open source software." *How-To Geek*. Retrieved from https:// www.howtogeek.com/287113/the-downsides-of-open-source-software/

Hong, R. (2013). "Game modding, prosumerism and neoliberal labor practices." *International Journal of Communication*, *7*: 984–1002.

Hurley, D. (2014). "12 challenges for open source projects." *opensource.com*. Retrieved from https://opensource.com/ life/14/6/12-challenges-open- source- projects

Hutchinson, H., Mackay, W., Westerlund, B., Bederson, B. B., Druin, A., Plaisant, C., Beaudouin-Lafon, M., Conversy, S., Evans, H., Hansen, H., Roussel, N., and Eiderbäck, B. (2003). "Technology probes: inspiring design for and with families." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 17–24. New York: Association for Computing Machinery.

Jenkins, H. (2006). *Fans, bloggers, and gamers: exploring participatory culture*. New York: New York University Press.

Kitchin, R., and Dodge, M. (2011). *Code/space: software and everyday life*. Cambridge, MA: The MIT Press.

Koskinen, I., Zimmerman, J., Binder, T., Redström, J., and Wensveen, S. (2011). *Design research through practice: from the lab, field, and showroom*. Waltham, MA: Elsevier.

Lieberman, H., Paternò, F., and Wulf, V. (Eds.) (2006). *End user development*. Dordrecht, The Netherlands: Springer.

Livingston, C. (2014). "Mod of the week: Network Addon Mod, for SimCity 4." *PC Gamer*. Retrieved from https://www.pcgamer.com/mod-of-the-week-network-addon-mod-for-simcity-4/

Margolin, V. (2010). "Design research: towards a history." In D. Durling, R. Bousbaci, L.-L. Chen, P. Gauthier, T. Poldma, S. Roworth-Stokes and E. Stolterman (Eds), *Design & Complexity: Design Research Society International Conference Montreal 2010*, 978–984. Montreal: Design Research Society.

McWhertor, M. (2015). "Valve kills paid mods on Steam, will refund Skyrim mod buyers." *Polygon*. Retrieved from https://www.polygon.com/2015/4/27/8505883/valve-removing-paid-mods-from-steam

Mika, M. (2013). "Why I hacked Donkey Kong for my daughter." *Wired*. Retrieved from https:// www.wired.com/ 2013/03/donkey-kong-pauline-hack/

Postigo, H. (2007). "Of mods and modders: chasing down the value of fan-based digital game modifications." *Games and Culture*, *2*(4): 300–313.

Reseigh-Lincoln, D. (2017). "Skins, Smurfs and Skyrim: a brief history of PC modding." *TechRadar*. Retrieved from https://www.techradar.com/news/skins-smurfs-and-skyrim-a-brief-history-of-pc-modding

Rockwell, G. (2003). "Serious play at hand: is gaming serious research in the humanities?" *TEXT Technology*, *2*: 89–99.

Sansing, C. (2003). "Case study and appeal: building the Ivanhoe game for classroom flexibility." *TEXT Technology*, *2*: 43–52.

Sotamaa, O. (2010). "When the game is not enough: motivations and practices among computer game modding culture." *Games and Culture*, *5*(3): 239–255.

Stokes, P. D. (2005). *Creativity from constraints: the psychology of breakthrough*. New York: Springer Publishing Company.

Wells, M. J. (2017). *Cold war games: operational gaming and interactive programming in historical and contemporary contexts*. (Doctoral dissertation). Retrieved from ProQuest (10265139).

Whitaker, R. (2016, December). "Age of Empires II HD is getting a new expansion titled Rise of the Rajas." *The Escapist*. Retrieved from http://www.escapistmagazine.com/news/view/169041-Age-of-Empires-II-HD-Getting-A-New-Expansion-Rise-of-the-Rajas

ABSTRACTS

In certain digital gaming subcultures, specific games are extended and enhanced by players who create "mods", or modifications, that add new artwork, new scenarios, and even new rules. "Modders" meet in online communities that foster engagement through the discussion and self-publication of mods, and these can keep interest in a given game going years after it is released. Most importantly, modding allows players to challenge and subvert dominant discourses, and to foster cultures of inclusivity. These DIY efforts could be adapted by academic publishers, particularly those focused on design research, to encourage sustained engagement with scholarly materials. This article discusses the history of modding, provides examples, and sketches one online modding community in detail. It then makes the argument that modding is a form of end-user engagement of the sort advocated by scholars such as Gerald Fischer, and compares modding to other online academic publishing efforts, such as webtexts.

INDEX

Keywords: games, modding, mods, programming

AUTHOR

MATTHEW WELLS

Ryerson University, Toronto, Canada
matthew.wells@ryerson.ca
(corresponding author)