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RESEARCH ARTICLE

Romans and Rollercoasters: Scholarship in the Digital Playground

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Engagement with, or research and teaching driven by, play has long been only a minor aspect of archaeological scholarship. In recent years, however, spurred on by the continued success of interactive entertainment, digital play has grown from a niche field to a promising avenue for all types of archaeological scholarship (Champion 2011; Champion 2015; Mol et al. 2017a; Morgan 2016; Reinhard 2018).

Firstly, this article provides an introduction on the intersection between play and scholarship, followed by a discussion on how ‘*archaeogaming*’ scholarship has been shaping and been shaped by its subject matter over the last years. Secondly, the scholarship that arises from digital play is further illustrated with a case study based on the *RoMinecraft* project developed by the authors. The latter, made use of *Minecraft*, the popular digital building game, to (re-)construct and discuss Roman heritage through collaborative play between archaeologists and members of the public. Starting with in-game maps, sites such as forts, settlements, and infrastructural elements were rebuilt based on geological, archaeological, and historical information. These crowdsourced reconstructions, which not only relied on archaeological knowledge but also on a fair dose of creativity, took place in a series of educational public events in 2017–2019. The case study will detail the results of this project, as well as its methods, thus providing a practical example of digital scholarship which begins with discovery and ends in learning. The paper will conclude by reflecting on how the fun yet unpredictable dynamics of a digital playground not only shape public engagement with the past, but also open up unexpected avenues for more inclusive archaeological scholarship.

Keywords: Minecraft; Video games; Archaeology; Roman; Digital Scholarship; Play

1. Introduction

The study of play, as a fundamental aspect of human society, formally started with *Homo Ludens*, a comparative study of play by the Dutch historian Johan Huizinga (1938). Play has since then branched out into many fields of study, including in its most recent and revolutionary incarnation as video games. Although the importance of play for cognitive, physical, social, and emotional development and wellbeing has been extensively studied, particularly in terms of childhood development (e.g. Frost, Wortham & Reifel 2007), the valuation of play remains ambiguous. Studies concerning the psychological and behavioural effects of violence in video games remain inconclusive (e.g. Anderson, Gentile & Buckley 2007; Przybylski & Weinstein 2019), however, discussions over the value and role have been dominated by such concerns.

In light of this, (digital) play – especially in terms of entertainment games rather than serious games (Klopfer et al. 2018) – is not yet always seen as a ‘suitable’ scholarly subject or activity. In recent years, despite the persistent stigma, digital playful activities have been increasingly and successfully incorporated into academia and other educational systems, as a novel and engaging way of conveying knowledge and experiences (Klopfer et al. 2018).

Despite this, scholarship driven by or focused on play has traditionally been neglected in archaeology. In recent years, however, digital play has grown from a niche field to a promising avenue for all types of archaeological scholarship. In this paper, we will be exploring the potential of video games as a powerful and empowering vessel for (archaeological) digital scholarship. We will do so by highlighting recent scholarship in the field and using a case study to demonstrate and problematise the use and incorporation of video games in archaeological outreach.

The playground is often evoked as a metaphor in studies of play, especially as an extension of Huizinga’s famous magic circles (1938: 10), the consecrated, “temporary worlds within the ordinary world, dedicated to the performance of an act apart”. Here, we follow its conceptualization by the cultural philosopher and game developer, Ian Bogost (2016). For Bogost, a playground is anything

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with boundaries and content that is experienced as fun. In turn, fun can be any activity that is related to with commitment, attention, and care (Bogost 2016: 33). It is true that such a definition of a playground is open-ended; as the title of Bogost's book indicates, it is possible to *Play Anything*. We feel, however, that the idea of a playground is particularly commensurate with the archaeological discipline. In *Play Anything*, we find an example playground around "big-box archaeology" (Bogost 2016: 41). This is a game in which you, as a player, 'excavate' things in Walmart, an American superstore, by placing them in your cart, recording them, and giving every individual thing your momentary but undivided attention. By playing with things, even collections of mundane items, we lose our distance from them, thus enabling us to experience them in new, and so Bogost argues, more fulfilling ways. Seen in this light, archaeology is already defined through its creation of playgrounds.

Our discussion is also informed by Boyer's (1990) work on scholarship, who expanded its traditional horizon beyond 'pure research' to include disciplinary integration, teaching, and public engagement. Since Boyer's original work, digital media and other technologies have changed scholarship by making it more open, networked, fast, cheap, and 'out of control' (Weller 2011). Such dynamics are core to the archaeological scholarship of video games, where traditional concepts and conceptions of archaeological theory, method, and interpretation are played around with (Reinhard 2018). Indeed, scholarly gaming does not need to – and often cannot – take place in the context of university offices and lecture halls and much archaeological video game scholarship is not institutionally academic (to begin with).

It bears pointing out that, while video games are first and foremost an entertainment medium, this does not mean that what happens in them is 'merely' a form of entertainment, or that scholarship about them is. When we present or informally chat about video games and archaeology with academic peers, we frequently encounter a sense, not of criticism but of disbelief that playing games as part of academic practice is actually 'a thing'. There is always a palpable sense that, maybe, we are leading them on. Interestingly, this scepticism of fun – widely carried in our modern societies (Sharp & Thomas 2019) – is hardly ever present when peers visit us during one of our playful events or live streams, even more so if they partake in the activity. This is the difference between indirectly learning of, and directly taking part in a playground.

How scholarship arises in digital play will be detailed and illustrated with a case study based on RoMeinCraft, a project developed and executed by the authors in 2017–2019. The project consisted of a series of public events in museums and municipalities, where the visiting public had the opportunity to rebuild Roman heritage of the Netherlands in the popular game *Minecraft*. In reviewing the project, we will detail its theoretical framework and methodology, as well as the execution and results. A particular focus will be given to the open, bottom-up nature of the project, whereby the participants had as much say in the rebuilding as the experts, leading to both play and

counter-play. In concluding, we reflect from the perspective of this project on the potential of archaeogaming and digital playgrounds to change archaeological scholarship.

2. The Past Is at Play

Over the last five decades, digital play and video games have become a pervasive part of society. Games are one of the biggest sector(s) in the entertainment industry and their market share continues to increase (Koenig 2018; Shieber 2019; Wolf 2015). In fact, millions of people play digital games, even if they do not consider themselves to be 'gamers' – a personal and social identity formed through a complex interplay of norms, values, and performances (Keogh 2018; Shaw 2013). Counter to lingering stereotypes, yearly surveys of USA households by the Entertainment Software Association show an increasingly balanced representation of people playing games, with *e.g.* a far greater portion (33%) of adult women playing video games than boys under 18 (17%) (ESA 2018: 4). With this growth of the industry and diversity in the community of players, video games have a significant impact on the larger cultural landscapes of contemporary societies. It is therefore not surprising that the rise of this medium has often been accompanied by a wide-ranging societal discussion on the role of play and the influence of digital media on our lives (*e.g.* Goldberg & Larsson 2015). A full overview of the scholarship on video games, studied in disciplines as diverse as computer science, psychology, economics, media studies, and, of course, game studies, is beyond the scope of this paper. While there exist a good number of books and studies on play and games (*e.g.* Bainbridge 2010; Goldberg & Larson 2015; Sharp & Thomas 2019), the most up to date overviews and content-focused discussions can often be found in online, quality news outlets such as *Kotaku*, *Polygon*, and *Eurogamer*.

Video games, much like any other entertainment medium, build on a wide range of real world inspirations to develop their narratives, settings, mechanics, characters, and other elements. Among these, the past takes center stage. Some of the most successful video game series of all time, including *Assassin's Creed*, *Sid Meier's Civilization*, and *Total War*, have gained commercial and critical success based on their playful iterations of actual history. These are not the only examples of this: at the time of writing, Steam, the world's leading digital distribution platform for games, lists several hundred games that have been tagged by its players as 'historical.' With at least 200 million copies of these 'historical' games sold to its users, this platform alone accounts for several billion hours collectively played.¹ To put this into perspective, this astronomically large number reflects only a subset of games, *i.e.* the ones that are explicitly tagged as historical by users of Steam. Many more games on Steam and beyond – *e.g.* Apple's App store, the Google Play store, or any of the many other places where you can buy or play games – contain references to or explicitly build on elements of the human past, including many examples of (popular) archaeology in terms of practice, theory, and material culture (Coppelstone 2017). Adding to this more free-form experiences like *Minecraft* or *Dreams*, makes it

difficult to overstate, as well as measure the impact digital play has on contemporary experiences of the past.

Although this enormous and popularly-carried engagement with the past seems like a positive development for archaeology and heritage, the types of experiences of the past afforded by the majority of these games are relatively narrow, with a heavy focus on warfare, interpersonal violence, or other forms of conflict (Mol et al. 2017a; Politopoulos et al. 2019). Those games that offer a wider range of activities can display other problems. For example, *Sid Meier's Civilization* tasks a player with building an empire through a combination of military, technological, and cultural development, yet its designers have traditionally coupled an avowedly apolitical approach to the past with a typically Anglo-Saxon, enlightenment reading of history (Mol et al. 2017b). Even when care has been taken to present a multi-faceted history, problems may still arise when players encounter a very convincing reconstruction without realizing that this too is subject to specific design decisions (Boom et al. forthcoming). The latter is the case for the *Assassin's Creed* series, the developers of which create highly detailed historic cities and events, supported by consultations with experts such as archaeologists and historians. They also have a "30 second Wikipedia-rule", according to which information on a historical detail has to be found within thirty seconds on Wikipedia; if not, artistic license can be applied to it by an individual developer (Copplesstone 2014; Politopoulos et al. 2019).

The point here is not, of course, that creatives in the game industry should not include aspects of the past in their work or that they are doing a poor job within the framework of their profession. Archaeologists and historians, as practitioners of a discipline that has traditionally been looked at by the public at large to provide knowledge of and access to the past, should be aware that (1) more and more, people gain alternate access to experiences of the past during play, and (2) we can contribute to what goes on in these digital playgrounds with critical, positive, and constructive scholarship. Indeed, in recent years, a growing community of archaeology and heritage scholars has taken a much closer interest in video games.

2.1. The Archaeological Scholarship of Digital Play

For many scholars or members of the public, the first encounter with the growing and vibrant scholarship on video games in archaeology and heritage studies starts with (the hashtag) "*archaeogaming*," a term first coined by Andrew Reinhard in his blog of the same name in 2013. Some years later, Meghan Dennis, in her *Gingerygamer* blog defined archaeogaming as "the utilization and treatment of immaterial space to study created culture, specifically through video games" (Dennis n.d.) Although definitions such as these are helpful in creating a common ground, we suggest that rather than defining archaeogaming as a subfield or through theoretical or methodological interests, it can be better understood and discussed as a movement born in and out of playful, digital scholarship. Archaeogaming is, in a sense, the fun of sharing a (scholarly) playground, one that is itself constructed or built on digital playgrounds. The community started small

and its core of practitioners still is small relative to the field of archaeology as a whole. Yet, the concept is one that speaks to the imagination of the general public, as evidenced by feedback from participants to archaeogaming events and (un-)conferences, as well as the readership of related blogs and the viewership of streams and video series (see for example Mol 2016). At the roots of its popularity lie (1) an open and active, online community, (2) its (social media) reach due to the popularity of gaming as a pastime and frequent features by (gaming) press, and (3) the wide variety of practices that can be grouped under the header (see e.g. Reinhard 2018: 4, Figure 0.1).

While the interests of this movement may be far ranging, there are also scholarly products or practices that take an archaeological approach to (digital) play or vice versa that are not identified as archaeogaming. The previously mentioned big-box archaeology by Bogost is one example that could clearly fall under the scope of archaeology and games, but it would fall outside of the practices that currently have been labelled as archaeogaming. The same applies to forms of media archaeology, an established framework for studying media, including games, through time that builds on Foucault's "archaeology of knowledge" and a focus on their materialities and contexts (Huhtamo & Parikka 2011). Other comparable forms of scholarship are taking place concurrently in other disciplines, most notably history (Chapman 2016; Kapell & Elliott 2013; McCall 2011). Additionally, archaeogaming scholarship is almost entirely anglophone. The result of this is that some countries with strong local (digital) scholarship have their own initiatives at the intersection of video games and archaeology. Examples of these are the work on ArchaeoGames by German archaeologist and journalist Dominik Schott (2017) and the Brazilian Arqueologia Interativa e Simulações Eletrônicas (ARISE 2017) initiative. Finally, a sizeable amount of (unpublished) scholarship on games and the past has taken place before or separate from the coining of 'archaeogaming' (e.g. Champion 2011; Gardner 2008; Mol 2014; Morgan 2009). Indeed, the difference between archaeological video game scholarship pre-archaeogaming and within archaeogaming is not one of content, but one of an occasional, isolated paper versus a piece of work that is connected to a larger community of scholars sharing the same playground.

Notwithstanding the vocational levels of quality of video game studies, most scholarship on the topic starts out as 'pure' play, at first unrelated to archaeological inquiry. Although individual trajectories may vary, we have found there is a common thread in which a person undergoing or having advanced training in archaeology makes connections between a favorite pastime and their understanding of archaeological practice or theory. For example, Colleen Morgan's research on the virtual Çatalhöyük, started out with an interest in the *Second Life* platform itself (Morgan 2009). A similar story is told by Reinhard (2013), starting out by playing *World of Warcraft* – and disliking its background history – but afterwards seeing the archaeological opportunities in these virtual worlds. The same applies to the authors of this paper, who came to the study of games first through playing (a lot of) games, next to undergoing

graduate training. Only eventually did we come to realize that the two can be convincingly connected.

We suggest that this process of integration happens quite often, *i.e.* there are many more persons who have integrated archaeology and games in their scholarship than there are practicing archaeogaming scholars. Gaming is an immensely popular activity and many archaeologists play games. Research among academic staff and students at the Faculty of Archaeology, Leiden University, places the number as high as 76% for students and 52% for staff (Mol et al. 2016). While not all (52%) view games as having an intrinsic value to archaeological practice, this still leaves a sizeable population of trained archaeologists who may informally engage in personal video game scholarship. Of course, only a subset of them ever communicates their insights publicly. Still, here we may see a typical difference between archaeogaming and traditional understandings of scholarship. Where the discovery of new knowledge in a specific discipline or area is traditionally seen as the primary mode of scholarship (Boyer 1990: 12), most archaeological video gaming research, like other digital scholarship (Wellen 2011), is best characterized as interdisciplinary from the start and at its core.

Since it frequently starts out as digital scholarship ‘on the side,’ it may not be surprising that the field has its grassroots in the ‘blog-sphere’ – even if there is now a growing selection of works published in academic outlets. At the end of the 2000s, Shawn Graham’s *Electric Archaeology* was among the first to highlight video games in connection to archaeology and history (Graham 2015). Other blogs, like *Play the Past* (2011) – a collective of historians, archaeologists, and heritage and media studies professionals – Tara Copplestone’s *Gamingarchaeo*, the VALUE Foundation’s² own *Interactive Pasts* (VALUE 2016), as well as the previously mentioned *Archaeogaming* and *Gingerygamer* platforms, started in the first half of the 2010s. Aside from blogs which contain a diversity of content from video game reviews, to scholarly reflections on archaeological theories and methodologies in games, or even informal reception studies, archaeogaming is shaped by active discussions and collaborations on Twitter. Finally, it is also noteworthy that at least three online archaeogaming (un)conferences have taken place: The Archaeogaming Unconference 1 and 2 in 2015 and 2017, organized by Tara Copplestone and Shawn Graham, and TIPC-Online (The Interactive Pasts Conference-Online), organized by the VALUE Foundation in 2017.

The digital embedding of the field has an impact beyond the affordances (and constraints) of online communication platforms. The fact that the subject of study is itself digital fundamentally changes this form of archaeology. Undertaking an archaeology of or through games means that much of what works in analogue archaeology has to be fundamentally re-considered or re-cast: time, space, cultures, societies, and identities in video game spaces frequently exhibit wildly different dynamics compared to their analogue counterparts (*e.g.* Hiriart 2016; further examples below). Some archaeogaming scholars, most notably Reinhard (2018), have experimented with the

direct application of traditional archaeological methods to video games. Others have found fertile ground in the extension of Agent Based Modelling approaches to video games and vice versa (Graham 2017). The subject is also a hothouse for the exploration of methods that are not traditionally conceived of as archaeological, such as the retrogame archaeology of John Aycock (2016), whereby he uses a computational-meets-historical approach to understand the technological constraints of early video games.

Besides such more methodology-focused studies, the main opportunity for research through video games may lie in how this medium can push us to reconsider the boundary of archaeological theory. A good example of this can be found in the games and writings of Tara Copplestone. She highlights how archaeological thinking is shaped by the linearity and materiality of its main form of producing narratives (books and papers), and explores how interactivity, for instance using the hypertext game platform *Twine*, can advance the development of multi-vocal and non-linear archaeology (Copplestone 2017; Copplestone & Dunne 2017). Similar boundary work is done by Florence Smith Nicholls, whose blogs and papers deal with subaltern and alternate archaeologies. Among other things, they have argued for applying queer phenomenology and to “pursue the idea of an assemblage of play” (Smith Nicholls 2018: 223) particularly when exploring virtual dark tourism. We can find similar progressive efforts when it comes to archaeological ethics. For example, the work by Dennis (2016) on looting in games also explored the extent to which archaeological ethical standards and guidelines can be adopted and established for archaeogaming. This led, among others, to the development of a *Code of Ethics* (Flick et al. 2017) for the *No Man’s Sky Archaeological Survey*. Fothergill and Flick (2017) have written about the depiction of animals, in this case chickens, in video games and how different games – due to their mechanics, tropes, and other elements – can support, encourage, or discourage various ways of treating virtual animals. Finally, archaeology can learn much from how Indigenous scholars and communities have engaged with the development of video games based on their own stories and perspectives (*e.g.* Cook Inlet Tribal Council 2017), as well as critically reviewed the opportunities and (copyright and representational) challenges involved in bringing traditional heritages into the digital realm (Hughes 2017).

Education and outreach is perhaps the most promising and challenging field when combining video games and archaeology. When it comes to teaching there are multiple ways in which games can be employed (Boom et al. forthcoming). Games that are explicitly historical, such as those in the *Assassin’s Creed* series, may even be considered suitable educational materials, although a general focus on violence mars the usefulness of even such well-researched games (Politopoulos et al. 2019). Other games can function as jumping off points for the wider role and portrayal of the past in contemporary society. It is even possible to teach an entire university-level course on the subject, as evidenced at the University of Cologne, with

a BA course focusing on concepts of the past in video games.³ Finally, creation in or of games, for example using mods or the aforementioned Twine platform, can be a very stimulating and empowering exercise (McCall 2011). Notwithstanding the positive experiences we and our students have had with video games in formal classroom settings, the positive informal reports from colleagues who have undertaken similar play-based teaching, and a solid body of work on the benefit of games in general educational settings (see for example Ferdig 2008; Klopfler *et al.* 2018; Lynch, Mallon & Connolly 2015; SRI International 2013), there are few formal studies that address the effectiveness of games on the transmission of knowledge about the past specifically. Most studies have taken place in museum settings with only a small number of participants and are relatively narrow in scope, in addition to lacking a comparable evaluative framework (Koutsabasis 2017). While quantifications of experience generally run counter to and can be obstructive to play, in our increasingly evaluative and metric-driven societies, this is an issue archaeogaming scholars need to and have begun to explore (Boom *et al.* forthcoming; Champion 2011; Hiriart 2016).

To sum up this non-exhaustive review of scholarly practices in the field, archaeogaming or, more broadly, work done at the intersection of video games and the past, is a small but increasingly important and progressive force in moving the boundaries of traditional and core archaeological scholarship. At the same time, archaeogaming and related scholarship branches out into new fields by exploring new theories and methods for research, education, and outreach that have not traditionally been a part of (digital) archaeology. While the field has this overarching promise and energy, there are a number of potential pitfalls. For example, it can still be difficult to communicate or substantiate how scholarship in and through games is as effective as that of other archaeology subjects. There is also the threat of settling into a community of archaeologists that looks inward to the own discipline rather than grow as part of an outward looking, trans-disciplinary movement centred around an appreciation and deeper understanding of the past and play. Finally, there is the real danger of quite literally spoiling the fun of digital playgrounds through a heavy-handed, academic approach. In the following case-study we will discuss these and other promises and pitfalls in using *Minecraft* for heritage re-constructions.

3. Designing the RoMinecraft Project

In this section, we will detail RoMinecraft, a project developed and carried out by the authors through our organization, the VALUE Foundation. It serves as a case study for how video games can be used to create accessible and participatory engagement with the past. The aim and core idea of RoMinecraft is the re-creation of existing or lost Roman cultural heritage sites in the video game *Minecraft* together with the broader public. Through these playful reconstructions, the audience and players can engage with Roman cultural heritage and access it in a unique way.

Minecraft is an open world sandbox game, which means that the player is basically free to move around anywhere on the map. What makes *Minecraft* unique among games is the apparent lack of any storyline or narrative. The player is thrown into a blocky, pixelated world and is forced to survive by any means necessary. This survival boils down to a simple mechanic: players can dig up materials, combine them, and build with them. As such, *Minecraft* can be described as the LEGO of this generation: a world made of blocks in which you can build anything you can imagine.

This latter aspect is what made *Minecraft* an ideal candidate for our project. In the game's 'creative mode,' all materials are available and the survival aspect of the game (monsters, day cycle *etc.*) can be removed. The simplicity of the game, essentially just placing blocks on top of each other, makes it easy for anyone to start building. Finally, the game's commercial success (*Minecraft* sold 176 million copies by May 2019) means that there is a very large audience who is already familiar with the game.

RoMinecraft was partly inspired by *Crafting the Past*, a *Minecraft* project which had run as part of *Dig It! 2015*, a year-long celebration of Scottish archaeology which combined many different public archaeology events and projects (McGraw, Reid & Sanders 2017). RoMinecraft was also based on two earlier public *Minecraft* events we had organized through VALUE at the Faculty of Archaeology, Leiden University (2015): the reconstruction of the Temple of Bel, Palmyra (**Figure 1**), and the reconstruction of the Roman fort Matilo, Leiden.

In 2017, we expanded the concept and organized a series of reconstructions all linked to the theme of South-Holland's Roman heritage, specifically the Roman *Limes* of which a part runs through the province. Extending into Germany, this Lower Germanic *Limes* formed part of the upper reaches of the Roman border, and was proposed for nomination to the World Heritage List in 2011. Joining ongoing efforts to increase the visibility and importance of the Dutch Roman *Limes* in the eye of the public, *RoMinecraft: Virtual Reconnaissance of the Dutch Limes* was created. It began as a series of 11 events, held at various locations in South-Holland over the course of a year (June 2017–May 2018). The project was funded by the province of South-Holland and organized by the VALUE Foundation in partnership with the Dutch *Limes* Foundation (Stichting Romeinse Limes Nederland). Each event took place in municipalities along the former Roman border, where Roman remains – such as forts, harbours, or camps – were present but not necessarily visible in the modern landscape. A reconstruction of these sites in *Minecraft* would serve to improve local visibility of and access to the sites.

The goal of RoMinecraft was to increase the knowledge of, interest in, and passion for local Roman heritage for visitors of all ages by using a playful yet evidence-based approach. Participants were encouraged to base their play on archaeological and historical information in the form of site plans, detailed building plans to scale, photographs of experimental reconstructions, and artistic impressions, but to also be creative. This formula had already proven to



Figure 1: The reconstruction of Palmyra in Minecraft event at the Faculty of Archaeology, Leiden University, organized by the VALUE Foundation in 2015. Photo by: Vincent Vandemeulebroucke. Reproduced with permission.

work well during the previous events, but was now converted into a more systematic approach.

For instance, we provided participants not only with booklets with archaeological and historical information (designed to be suitable for all ages by primarily containing visual sources), but we also gave them rulers and assisted in calculations to plan the dimensions of their reconstructions. Yet, creativity was highly stimulated, showing participants that the development of archaeological knowledge is often the result of interpretation and creative thinking on the basis of (fragmentary) data and material remains. Instead of organizing the events around a lecture-style presentation, event hosts – members of the VALUE Foundation, volunteers, and staff from the host institution – walked around the play-area throughout the event and interacted with the players and spectators individually or in small groups.

Although the content and setup of the events had evolved from our earlier projects with the creation of RoMinecraft, our core value of accessibility remained

intact. RoMinecraft was to consist of events which were open to the public, free-of-charge, and provided the opportunity for anyone to drop in for as long as they wanted to watch or play. Whereas our first two *Minecraft* events had taken place within an academic institution, RoMinecraft events were planned for public spaces, such as science and heritage festivals, within museum spaces (generally in their freely accessible entrance halls), cultural centers, bars, and market squares, hoping that the threshold for participation (both in terms of location, financial accessibility, and a feeling of inclusivity) would be relatively low.

The design began with the creation of a base playground for the reconstruction of the Dutch Limes that was as authentic as possible. For that reason, we decided to recreate the entire landscape of the province of South-Holland as a *Minecraft* map on a 1:4 scale, with the areas around Roman sites at a 1:1 scale. The development of the map was done with WorldPainter, an interactive mapping tool for *Minecraft*. This software allows for the creation of any type of landscape that is available within the

game and can export this as a playable map. The elevation maps of the province of South-Holland from 200 CE (Colenbrander 2005) formed the basis for the development of the RoMinecraft map. We were able to draw in some of the major features of the Limes, such as the Roman road itself and key canals, and we prepared for the reconstruction of the Roman sites along the Limes by calculating the locations and sizes of the sites, and flattening the landscape in preparation for the buildings (**Figure 2**). As *Minecraft* contains blocks of $1 \times 1 \times 1$ and we built the fort locations on a 1:1 scale, we instructed participants to reconstruct buildings and sites on their original scale.

The technical setup was built around four computers and monitors, connected via a router, effectively creating a portable LAN-environment that we could take with us and set up in each event location.⁴ This flexibility enabled us to travel to and organize events in widely different settings (**Figure 3**). Three of the computers were available to

the participants to join in on playing and reconstructing the local section of the Limes. Depending on how many players were present and waiting for their turn, participants could play in c. 15-minute instalments, whereby we encouraged friends or siblings to play together and parents to join their children in play. The fourth computer was set up as a Virtual Reality station, where people could put on an Oculus Rift headset and virtually step into the same *Minecraft* map, witness the ongoing reconstruction process or tour already constructed parts of the Limes from previous events. The virtual reality experience of RoMinecraft was particularly useful in providing participants with a true sense of scale and a deeper appreciation of Roman heritage and also of their own contributions, by visiting the buildings they had just constructed.

Besides these four computers that were used by the public, a laptop acted as the host of the shared map and was used by a member of the VALUE Foundation to also participate actively in the reconstruction. This builder could help players in game when needed, *e.g.* teleporting them to locations, fixing things that had been accidentally broken, or laying the foundations for new building projects. Through the local multiplayer setup, we could provide participants with the opportunity to bring their own laptops and to join in on the reconstruction from their own devices. This enabled dedicated participants to play for longer periods of time and engage in complex building projects. Finally, an HD-projector and a large projection screen provided those who were awaiting their turn or those who were interested in the process as spectators with a real-time view of the reconstruction in progress.

To develop the desired (real and digital) playground in which participants could engage with Dutch Roman heritage, we worked to create an open and welcoming atmosphere in which participants felt that their contributions were meaningful and valued. This required a delicate balancing act between encouraging creativity, fun, and individual actions on the one hand, and ensuring positive cooperation, respect, and a dedication to the historical content on the other hand.

In designing RoMinecraft, we had envisioned our own roles to be that of event hosts and mediators between knowledge of the past and the ongoing virtual reconstruction. Thus, we focused our efforts on aspects such as visitor services (*e.g.* ensuring the safety of participants when using Virtual Reality), our own content knowledge, and how to support experiential learning through cooperative play. Although we envisioned content learning to take place during the events, we had not preemptively formalized learning goals, nor did we plan for structured evaluations or impact measurements. In practice, the popularity of the events (with anywhere between 40–250 visitors over a five-hour event) meant that we were constantly in conversation with participants and often – quite literally – had our hands full. As a result, we did not document our verbal or digital interactions in writing. In future events, this is something we have tried to alleviate, where possible, by having additional persons at hand, for instance



Figure 2: The stages of creating the South Holland map in *Minecraft*, from the elevation maps, to Adobe Photoshop, and then to WorldPainter.



Figure 3: The tent where RoMinecraft was held during the ‘Day of the Hague History’ festival April 14, 2018. Photo by: Krijn Boom. Reproduced with permission.

from the host museum or event organizer, expressly to survey participants.

4. Play and Counterplay

The unique formula of RoMinecraft, combining archaeological pasts with the digital present, and truthful authenticity with playful creativity, was highly valued. The project was expanded to other provinces in the Netherlands (2018), and across the border into Belgium (2019). Not only did we receive requests for repeated events by host institutions, some visitors also joined us for multiple events – or returned to the event several times in the same day. From our interactions with over a thousand participants, we can share our observations from our own experiences and ad-hoc informal discussions with participants. Besides generally positive reactions and enthusiastic participation, we also observed great variety in the ways in which people engaged in play and experienced the Roman heritage.

Some participants showed a new or renewed interest in Roman heritage, for instance leading to a decision to write their next school report on the Romans. For others, RoMinecraft inspired them to play *Minecraft* in new ways: instead of building roller coasters and castles, they planned to download the RoMinecraft map at home after the event and continue building Roman sites. Yet again others engaged with a specific type of Roman building, such as a watch tower or granary, or started to think about the ways in which Roman life may have been different from their own. The diversity of experiences was further supported by the style of engagement we had with our participants; although we were ready to help, advise, or supervise the playful reconstruction and provided booklets with materials, participants were encouraged to independently design their play (Figure 4). Individually, or together with siblings, parents, and friends, it was up to the player to decide which part of the site to reconstruct

– a gate, farmhouse, watch tower, mosaic floor, bridge – whether to construct an entire building or part of a structure, which materials to use, or which animals to spawn (Figure 5). Thus, allowing the players to largely design their own engagement with RoMinecraft resulted in vastly different experiences and, assumedly, impacts.

The fun aspect of the events was also supported by the fact that participants had the freedom to choose how they wanted to engage with RoMinecraft: as spectators, as builders, as virtual reality explorers, or as all of these three. Virtual reality appealed to visitors of all ages; younger visitors were enthusiastic about being able to really be *in Minecraft* and by the sensations of flying and falling, while older visitors were impressed by the very ‘real’ feeling of VR and the wonders of technology. The sense of scale of the Roman sites was something that was particularly ‘felt’ in VR. Parents and grandparents were more often spectators, while it was particularly children (aged c. 7–14) who were the most frequent builders and the most skilled Minecrafters. Yet, RoMinecraft was often a profoundly social experience, whereby parents would plan the reconstruction together with their children and would often be amazed at the knowledge (*i.e.* of the game or of the English language) and the skills they possessed. As one parent exclaimed: “that those kids can do that, wow!” (pers.comm. 5 May 2019; our translation). Children, in their turn, would often team up, also with strangers, to work on projects together, and would talk in person or over chat to develop strategies and make decisions.

Naturally, the freedom participants had to engage with RoMinecraft in their own way and to build their own playground led not only to meaningful play but also to interesting counterplay. In *Minecraft’s* ‘creative mode’ players have access to all materials and objects, and this was exciting for many of the participants who experimented with building or spawning materials they otherwise do not



Figure 4: A RoMeincraft event during the National Archaeology Days, 14–15 October 2017, hosted in the Temple Hall of the National Museum of Antiquities, Leiden. Photo by: Angus Mol. Reproduced with permission.



Figure 5: Screenshot of the reconstructed fort Matilo in Minecraft which had been built over several RoMeincraft events held in Leiden, 2017.

usually see when they play at home in survival mode. For instance, participants spawned many different animals leading to massive invasions of polar bears or alpacas (Figure 6). Some participants even entered cheat codes, leading to colour-changing sheep roaming around the map. A Roman fort might have a farmhouse next to it built entirely out of diamonds, a type of material which is otherwise extremely rare to obtain in the game. Finally, in at least one occasion, two of our younger attendees built an entirely functional rollercoaster in a fort.

To an extent, this type of counterplay was accepted as part of the crowdsourced experience of playing *Minecraft* together. Most of these actions were a valuable part of the

creative process and offered participants the freedom to discover different modes of engagement with the heritage reconstruction. In many cases, the same participant could engage in both play and counterplay within the same session. As an example, the fascination for the many different animals that could be spawned in the ‘creative mode’ of the game, led us to suggest to players creating parrot or polar bear plagues, to instead consider building a Roman market with all the animals that would be appropriate in that context.

However, we directly interfered in those cases where counterplay would/could ruin the fun for others, for instance when we noticed blocks of TNT being placed on



Figure 6: Screenshot of a not-so-historically-accurate Roman polar bear in fort Matilo.

the site. In these cases, having one of us present in-game as a builder enabled us to directly respond to the situation and quickly demolish the TNT before it was exploded. We were also invested in following this up with a constructive discussion about destruction. These discussions included topics related to the reasons behind their actions, the concept of communal building, and, if deemed appropriate (based on the response and the age of each individual), the topic of the destruction of cultural heritage.

Over the course of 11 events, RoMinecraft South-Holland engaged with approximately 1300 people who played in, spectated, and virtually visited the Roman Limes. Throughout these events, many different parts of the Roman Limes were (partially) reconstructed: the road itself, watch towers, the fort of Lugdunum Batavorum (Katwijk) with harbor and pyre, the fort and *vicus* of Matilo (Leiden), the cavalry fort of Praetorium Agrippinae (Valkenburg), and a mini-castellum (Ockenburgh, The Hague). In such a large, collective project, we encouraged participants to take ownership of their contributions by placing signposts and writing their names or nicknames on them. Indeed, with the exception of phallic structures, all other constructions that might not be deemed to fit accurately within the theme were left in situ or moved to a location where all these structures were collected. After each event, the newest version of the map was uploaded onto the project website (www.romeinecraft.nl) and became accessible for anyone to download and play at home. As the project aimed towards democratic participation and access to knowledge, we aimed at allowing participants to truly feel that their contributions were meaningful and valued (cf. Arnstein 1969): whether they had built a single wall or an entire building, their work was saved as part of the whole project.

To conclude, this overview is based on observation, informal conversation, and our own experiences as participants in these events. We believe they speak volumes for the potential of such open and accessible public projects,

as well as the potential of gaming for archaeological outreach. Despite not having collected formal qualitative or quantitative data at these events, we have aimed to show the value of RoMinecraft and its ability to engage the public with archaeological concepts.

5. Conclusion

As a phenomenon at the fringes of what has traditionally been perceived as archaeological scholarship, it is to be expected that a combination of the digital and the playful has been mostly pioneered outside of the ivory tower of academia: through blogging platforms, unconferences, live streams, crowd-facing publications (*i.e.* crowd-funded and crowd-sourced), game-playing and making, and many other creative renegotiations of the past and the discipline that studies it. It is still difficult to find a place for play and digital technologies in our institutions. Since Boyer (1990)'s call to transform our understanding of scholarship, academia has become more open to practices that go beyond that of study and research, at least in spirit – there is still a major discrepancy in the valuation of interdisciplinarity, outreach, and teaching activities vs. 'pure' research (see Johnson *et al.* 2019). Yet change is slow at institutions that have their roots firmly in the norms and sensibilities of the era of Enlightenment rather than that of our current (post-)digital society.

In this paper we discussed how work at the interface of archaeology and video games makes, to our mind, a powerful case against outmoded views of scholarly values, identities, and productivity as being incompatible with playfulness and fun. We discussed how archaeology is a field already defined by fun and, viewing it from the perspective of playgrounds, how it can be fruitfully connected to the concept of play. This was further supported by an overview of how archaeologists and others entwine their passion for the past and video games. This overview highlighted the open, innovative, and multi-faceted digital scholarship that arises from the combination

of seemingly separate, but certainly synergistic fields. The archaeogaming community and other game-based initiatives are already producing outcomes that change how we understand or study the past and, in doing so, present possible new avenues for archaeological scholarship. It is our belief that if this movement continues in its current critical yet open and accessible direction, it has the potential to become a guidelight in a variety of archaeological research and outreach practices.

To further illustrate this potential, we undertook a self-reflection of the *RoMinecraft* project. Clearly, as it grows and develops as a scholarly project, there are a number of things that need to be implemented, such as measuring impact, formally assessing the knowledge gained by participants during events, and the balancing of content and fun in playgrounds. Regardless, the development and execution of this project has yielded significant insights in how to use video games as a scholarly activity, and especially *Minecraft*, in open public events. These insights were not unidirectional: it is quite possible that we discovered more about the application of play than our participants were taught about the Roman past. True to other forms of contemporary digital scholarship, *RoMinecraft* neither functions as a 'pure' research, educational, or outreach project. It is this potential for innovative experiences and blending of boundaries, perhaps more than other measures of the project's success – high attendance numbers, positive informal feedback, repeat visits, as well as its expansion to different locations – which highlights the value of playful, digital, and open scholarship. It is our hope that *RoMinecraft* and other archaeogaming projects may inspire others to create their own playgrounds both for scholars, as well as the general public.

Notes

- ¹ These data have been collected from SteamSpy (<https://steamspy.com/tag/Historical/>) on December 20, 2018.
- ² The VALUE Foundation was founded in 2017 as the formalized continuation of the volunteer-run 'VALUE project' which had begun in early 2015 as a series of research and outreach activities combining the past and video games. For more information on the foundation see: www.value-foundation.org.
- ³ The BA course 'Archäogaming – Konzepte von Vergangenheit in Computer- und Videospiele' was taught by Sophie Schmidt and Jan G. Wieners over the 2018-2019 winter semester at the University of Cologne. Course objectives included: i) critical reflection of modern media: which "images" of history are evoked. Can stories through and in computer/video games be exhaustive and accurate? and ii) analysis of computer and video games based on media culture and archaeological expertise. See: <http://lehre.idh.uni-koeln.de/lehrveranstaltungen/wisem18/archaeogaming-computergames/>.
- ⁴ The computers were custom-made by VALUE with the aim of being future proof. However, anyone wishing to develop similar *Minecraft* projects could use con-

ventional PCs or laptops since the game has fairly low requirements.

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Competing Interests

The authors have no competing interests to declare.

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