World, Structure and Play: A Framework for Games as Historical Research Outputs, Tools, and Processes

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The potential of historical digital games as academic research outputs has been discussed by a small but growing number of authors (Clyde et al., Spring, Chapman, Carvalho, etc.). To date most of this work has focussed on the validity of games as an academic historical form. This article moves the debate forward by considering the potential of games to act not only as representations of historical data and analysis, but also as a medium of historical debate. It leans on the framework described by the games scholar Espen Aarseth to propose that the fundamental nature of games could allow the exploration and interrogation of information and arguments. Through the interactive quality of the medium tied to a historically critical approach, players could become not only observers of an output, but participants in the process of historical debate. Ultimately, the article argues that while games can certainly never replace monographs and other scholarly outputs, they can be an important addition to the field of study.
Keywords: Video games, interactive History, research tools, public History.

Mundo, Estrutura e Jogo: um enquadramento dos jogos enquanto produtos, instrumentos e processos da investigação histórica

O potencial dos jogos digitais históricos enquanto investigação académica tem sido discutido por um número pequeno mas crescente de autores (Clyde et al., Spring, Chapman, Carvalho, etc.). Até hoje, a maior parte deste trabalho centrou-se na validade dos jogos enquanto forma histórica académica. Este artigo avança o debate ao considerar o potencial dos jogos não apenas para as representações de dados e análises históricas, mas também enquanto *medium* de debate histórico. Apoiando-se no enquadramento descrito pelo académico Espen Aarseth, o artigo propõe que a natureza fundamental dos jogos poderia permitir a exploração e o questionamento de informações e argumentos. Através da qualidade interactiva do *medium*, ligado a uma abordagem historicamente crítica, os jogadores poderiam tornar-se não apenas observadores de um produto historiográfico, mas participantes do processo de debate histórico. Em última análise, o artigo argumenta que, embora os jogos nunca possam substituir monografias e outros trabalhos académicos, eles podem ser um importante contributo ao campo de estudos.
Palavras-chave: Videojogos, História, simulação histórica.

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Robert Houghton*

Computer games are increasingly seen as serious media,[1] capable of portraying complex and mature issues in a manner distinct from that of more traditional formats. Games are frequently used as education tools. While Edutainment games (those designed specifically for the classroom) have had mixed success,[2] a growing range of games have been harnessed to support the study of history at almost every level.[3] The designers of historical games increasingly look to academic historians for support in the production of their work. Ubisoft (*Assassin's Creed*)[4] and Creative Assembly (*Total War*)[5] among other studios have all consulted traditionally trained and qualified academics to support claims of authenticity within their games. This drive for something akin to historical accuracy is driven in part by a desire to cre-

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I am most grateful to James Nangle for his advice and construction of several relationship network charts detailing links between characters in *Crusader Kings II*. Examples of James' excellent work can be found at: http://www.anquantarbuile.com//social-networks-in-ck2.

1 A. Chapman, "Is Sid Meier's Civilization history?," *Rethinking History* 17, nº 3 (2013): 312–32, at p. 313; M.G. Hill, "Tale of Two Fathers: Authenticating Fatherhood in Quantic Dream's Heavy Rain: The Origami Killer and Naughty Dog's The Last of Us," in *Pops in Pop Culture*, ed. E. Podnieks (New York, 2016), 159–76.

2 S. Egenfeldt-Nielsen, *Beyond edutainment: exploring the educational potential of computer games* (S.l., 2010).

3 T. Taylor, "Historical Simulations and the Future of the Historical Narrative," *History and Computing* 6, nº 2 (2003); A. McMichael, "PC Games and the Teaching of History," *The History Teacher* 40, nº 2 (2007): 203–18; J. Pagnotti and W.B. Russell, "Using Civilization IV to Engage Students in World History Content," *The Social Studies* 103, nº 1 (2012): 39–48.

4 D. Tarason, "Assassin's Creed Origins becomes edutainment Feb 20th," *Rock, Paper, Shotgun* (2018); "Discovery Tour by Assassin's Creed: Ancient Egypt," *Assassin's Creed* (2018).

5 L. Folder, "Thrones of Britannia – Campaign Map Reveal," *Total War Blog* (2017).

ate a more immersive and enjoyable play environment, but also by consumer demand: a sizable proportion of the players of each of these franchises are attracted to the games by their historical credibility and credentials.[6] Carvalho has recently suggested that these games may provide a bridge between academic and popular history.[7] In any event, these serious and educational historical games are frequently driven by academic historical research.

The inverse is rarely true. With a few notable exceptions, historical computer games are almost never considered as useful supporting structures for historical research.[8] Although the possibilities of academic historians supporting historical games are frequently addressed in both theory and practice, there is considerably less literature which considers the potential of historical games to support academic history. This article makes a case for the potential utility of digital games as historical research tools and outputs, arguing that while games can never replace traditional literary outputs, the unique nature of this medium could allow for an innovative and deep communication of historical data, argument, and debate. Furthermore, it suggests that some existing commercial games already perform these activities as a function of the inherent qualities of the medium, albeit in a limited and often unintentional and uncritical capacity. Ultimately: games and their players can conduct history as a participatory process.

The reluctance to consider games as research tools is understandable. Computer games are a new medium. They are very different from literary works.[9] They are often (although increasingly less so) seen as frivolous things for children. Beyond this, there remains a divide in communication and skills between academic historians and games developers. Game design and coding is unknown and

6 E. Champion, *Critical Gaming: Interactive History and Virtual Heritage*, Digital research in the arts and humanities (Farnham: Surrey, 2015); T.J. Copplestone, "But that's not accurate: the differing perceptions of accuracy in cultural-heritage videogames between creators, consumers and critics," *Rethinking History* 21, nº 3 (2017: 415–38, at pp. 430–33.

7 V.M. Carvalho, "Videogames as Tools for Social Science History," *Historian* 79, nº 4 (2017): 794–819, at p. 801.

8 Chapman, "Is Sid Meier's Civilization history?," p. 313; D. Spring, "Gaming history: computer and video games as historical scholarship," *Rethinking History* 19, nº 2 (2015): 207–21, at p. 209.

9 K. Kee and J. Bachynski, "Outbreak: Lessons Learned from Developing a 'History Game'." *Loading... The Journal of the Canadian Game Studies Association* 3, nº 4 (2009): 1–14, at p. 3.

intimidating to most historians[10] while historical methods and criticism are equally alien to many developers. There are of course numerous important exceptions to these sweeping statement, but it remains the case that there is a substantial gulf between History and Games Studies as academic disciplines.

As Chapman has noted, this division has contributed to a common perception that games are not suitable for the communication of 'proper' history.[11] Games are seen as capable of presenting only one view of history, denying a depth of understanding and analysis.[12] They are presented as reductive, simplifying and selecting material to facilitate play and entertainment.[13] There is some suspicion that games threaten the historical authority of traditional modes of history.[14]

This dismissal of the academic utility of games has meant that when games are considered as potential tools and outputs of historical research there is often a focus on adjusting the nature of the medium to better fit literary outputs: to create 'scholarly games' distinct from commercially produced games or even educational games. Clyde, Hopkins, and Wilkinson made a case for a 'gamic mode' of history: a means of presenting empirical historical arguments through the medium of games, maintaining the rigour of traditional written research outputs (the 'textual mode') while allowing some innovations, primarily in the presentation of source material and data.[15] They looked to create games which allow the exploration of historical arguments, but do not allow the player to change history thus setting the 'gamic mode' apart from simulation games.[16] Outputs in the 'gamic mode' would explore historical arguments, not events themselves.

Many of the points put forward by Clyde et al. have a great deal of merit. Their concern for the correct and clear citation of data and sources

10 Carvalho, "Videogames as Tools for Social Science History,": 818–19.

11 Chapman, "Is Sid Meier's Civilization history?,": 313–15.

12 A.R. Galloway, *Gaming: essays on algorithmic culture*, Electronic mediations 18 (Minneapolis, 2006), 104; J. De Groot, *Consuming history: historians and heritage in contemporary popular culture* (London: New York, 2016), 7–8.

13 Galloway, *Gaming*, 103.

14 Carvalho, "Videogames as Tools for Social Science History," 795–96.

15 J. Clyde, H. Hopkins, and G. Wilkinson, "Beyond the 'Historical' Simulation: Using Theories of History to Inform Scholarly Game Design," *Loading... The Journal of the Canadian Game Studies Association* 6, nº 9 (2012).

16 Clyde, Hopkins, and Wilkinson, "Beyond the 'Historical' Simulation," 10–11.

reflects the importance of well grounded research in academic studies.[17] Their demands for clarity in the use of this evidence and in the mechanics which present a game's argument are at least partially necessary to demonstrate the scholarly credentials of a historical game.[18] Their contention that digital games can usefully discuss history is certainly valid.[19] Ultimately, this 'gamic mode' of history could produce interesting and useful perspectives on the past communicated in an innovative manner.

However, I contend that the approach promoted by Clyde et al. does not fully embrace the potential of games as a medium. As Antley and Carvalho have argued, this attempt to use games to represent historical arguments in the same manner as traditional academic works overlooks the possibilities presented by games through their uniquely interactive nature.[20] Games cannot conduct history in the same manner as literary works, but they can nevertheless present coherent and valid historical discussion and analysis.[21] Games are not restricted to presenting a single perspective of history, through interaction players challenge and discus the world and hence the theory presented in the game.[22] Likewise, games are reductive, but only in the same way that literary histories are reductive: both media select and present information to demonstrate their arguments.[23] Historical

17 Clyde, Hopkins, and Wilkinson, "Beyond the 'Historical' Simulation," 12; Carvalho, "Videogames as Tools for Social Science History," 811.

18 Clyde, Hopkins, and Wilkinson, "Beyond the 'Historical' Simulation," 12–13; J. Antley, "Going Beyond the Textual in History," *Journal of Digital Humanities* 1, nº 2 (2012).

19 Clyde, Hopkins, and Wilkinson, "Beyond the 'Historical' Simulation," 6–7.

20 Antley, "Going Beyond the Textual in History"; Carvalho, "Videogames as Tools for Social Science History," 806.

21 R.A. Rosenstone, *History on film, film on history*, History : concepts, theories and practice (Harlow, 2006), 8; E. MacCallum-Stewart and J. Parsler, "Controversies: Historicising the Computer Game," *Situated Play, Proceedings of DiGRA 2007 Conference* (2007), 203–10, at p. 205; I. Bogost, "The Rhetoric of Video Games," in *The ecology of games: connecting youth, games, and learning*, ed. K.S. Tekinbaş. The John D. and Catherine T. Macarthur Foundation Series on Digital Media and Learning (Cambridge, Mass, 2008), 117–40; Chapman, "Is Sid Meier's Civilization history?," 321–22; Carvalho, "Videogames as Tools for Social Science History," 818.

22 Antley, "Going Beyond the Textual in History"; Chapman, "Is Sid Meier's Civilization history?," 316–18.

23 E.H. Carr, *What is history?* (New York, 1961), 9; J. McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use," *Journal of Digital Humanities* 1, nº 2 (2012); A. Chapman, "Privileging Form Over Content: Analysing Historical Videogames," *Journal of Digital Humanities* 1, nº 2 (2012), 42–46, at pp. 43–44; Chapman, "Is Sid Meier's Civilization history?," 322–25.

games can (and do) refer to primary[24] and secondary materials,[25] often presenting these sources in game or through external links.[26] Ultimately the game developer and even the player could fulfil the same role as an academic historian in collating these materials to create arguments,[27] albeit in a more informal manner.[28] The media are vastly different, but the fundamental elements of historical research and debate which they present could remain functionally similar.

The central thesis of this article is that computer games, through their unique nature, could provide innovative representations of historical information, detailed and coherent analysis of events and trends, and, perhaps most importantly, effective facilitation of academic debate regarding this data and analysis. These three elements – data, analysis, and debate – form the core of a significant proportion of academic historical research and there is therefore substantial potential for carefully developed and curated digital games to act as research outputs but also as tools in support of scholarly studies. Furthermore, each of these elements of historical research is closely supported by different aspects inherent to games as a medium. Games already conduct history in an informal manner and they could conduct and support academic history.

To this end, I will first address the interactive nature of games, reiterating and expanding the framework set out by Espen Aarseth.[29] I will then argue that this framework could form a basis for the use of games as historical research tools, confirming and extending earlier arguments for their ability to present data and analysis but also demonstrating that games may move beyond this portfolio to allow the critique of historical theories and the development of counterarguments. I will use a case study of the combat systems of *Mount and Blade: Warband* as an example of designers

24 Chapman, "Is Sid Meier's Civilization history?," 318–19.

25 K. Pobłocki, "Becoming-state: The bio-cultural imperialism of Sid Meier's Civilization," *Focaal - European Journal of Anthropology* 39 (2002): 163–77, at p. 163; Taylor, "Historical Simulations and the Future of the Historical Narrative"; Chapman, "Is Sid Meier's Civilization history?," 316.

26 Spring, "Gaming history," 211; Carvalho, "Videogames as Tools for Social Science History," 811–12.

27 Taylor, "Historical Simulations and the Future of the Historical Narrative"; Chapman, "Is Sid Meier's Civilization history?," 315, 319; Spring, "Gaming history," 208.

28 Pobłocki, "Becoming-state: The bio-cultural imperialism of Sid Meier's Civilization," 164.

29 E. Aarseth, "Playing Research: Methodological Approaches to Game Analysis," *Game Approaches/SPil-veje. Papers from Spilforskning.dk Conference* (2004), 1–7.

and players presenting historical data, analysis and debate in an informal manner through a game. Finally, I will address some of the key challenges and shortcomings which this method may face. Throughout the piece I will argue that computer games could be developed to address history in a fundamentally similar manner to an academic historical study albeit in a very different format. While the adoption of a rigid 'gamic mode' can certainly allow scholarly discussion through games, this is not the only means by which games may be useful in support of academic research. Games could represent both research outputs and the process of historical debate.

Games as an Interactive Medium

Computer games are hugely varied but share a core defining trait: they are inherently and explicitly interactive.[30] To some extent the player has influence over the events of the game and its eventual outcome. As Zimmermann notes, they allow "participation with designed choices and procedures".[31] This interactivity differentiates games from other media: consumers certainly interact with books, music, TV and film, but they do so in different and possibly more limited ways.[32] Ultimately, this difference requires that games present their subject matter, including historical representations, in a fundamentally different way from other media and require a different framework for their study. An understanding of the implications of this interactive trait is therefore of fundamental importance when considering the capacity of games as tools for historical research.

30 E. Zimmerman, "Narrative, Interactivity, Play and Games: Four Naughty Concepts in Need of Discipline," in *First person: new media as story, performance, and game*, ed. N. Wardrip-Fruin and P. Harrigan (Cambridge, Mass, 2004), 154–64, at pp. 158–59; G. Costikyan, "I have no words and I must design," in *The game design reader: a Rules of play anthology*, ed. K.S. Tekinbaş and E. Zimmerman (Cambridge, Mass, 2006), 192–211.

31 Zimmerman, "Narrative, Interactivity, Play and Games: Four Naughty Concepts in Need of Discipline," 158.

32 Zimmerman, "Narrative, Interactivity, Play and Games: Four Naughty Concepts in Need of Discipline," 158–59; M. Vosmeer and B. Schouten, "Interactive Cinema: Engagement and Interaction," in A. Mitchell, C. Fernández-Vara, and D. Thue, eds., *Interactive Storytelling*, 8832 (Cham, 2014), 140–47; A.B.R. Elliott, "Simulations and Simulacra: History in Video Games," *Práticas da História* 5 (2017), 11–41, at pp. 20–21; J. McCall, "Video Games as Participatory Public History," in *A companion to public history*, ed. D.M. Dean (Hoboken, NJ, 2018), 405–16, at pp. 405–06, 410–14.

The interactive quality of games has two vital consequences for their nature as a medium:

Firstly, interactivity demands the creation of a coherent and complete environment within games.[33] The player is free to act and explore to a certain extent and the game must be capable of dealing with the player's actions. A game is not simply the story presented to the player, but a panoply of calculations and statistics which ensure internally consistent outcomes.[34] While popular media in other formats can and do present carefully constructed explanations and justifications for the events they describe, they are not obliged to do so. While other media may provide theoretical models of processes, games must demonstrate exactly how these models work.

Secondly, the interactive nature of games means that authorship of a game is never the sole monopoly of its designers.[35] The designers establish boundaries and frameworks for the player, but through their actions players will change the events and outcomes which the game portrays. They are influenced by the vision of the game's producers, but ultimately players have the power to manipulate the story. A player's role as author is limited by what is possible within the world created by the game designers, but even this restriction can be overcome through user modification.[36]

The conditions created by this interactivity dictate that games are fundamentally different from other media. They cannot be understood as a narrative presented by their creators, but must also be viewed as logical explanations for this narrative and as a means by which their consumers may create further narratives. As a product of these conditions, Aarseth has categorised three overlapping elements of games: Game World; Game Structure; and Game Play.[37]

33 Bogost, "The Rhetoric of Video Games"; McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use"; T. Fullerton, *Game design workshop: a playcentric approach to creating innovative games* (Boca Raton, 2014).

34 Costikyan, "I have no words and I must design," 194.

35 C. Poremba, "Patches of peace: Tiny signs of agency in digital games," *DiGRA International Conference: Level Up, Utrecht, the Netherlands* (2003); K. Sarikakis, C. Krug, and J.R. Rodriguez-Amat, "Defining authorship in user-generated content: Copyright struggles in *The Game of Thrones*," *New Media & Society* 19, nº 4 (2017): 542–59.

36 A. Chapman, *Digital games as history: how videogames represent the past and offer access to historical practice*, Routledge advances in game studies 7 (New York, NY, 2016), 37–39; Elliott, "Simulations and Simulacra," p. 19.

37 Aarseth, "Playing Research: Methodological Approaches to Game Analysis".

The game world is the surface layer of the game: the graphics, audio, user interface, and often the narrative. It is what the player sees and hears within the game.[38] This element is shared with other media forms and is what ties games most strongly to more traditional literary and audio-visual works. The interactive nature of games allows players to explore their worlds in different ways than consumers of other media: players determine which areas are visited, which figures are addressed, and which strategies are employed. This often demands the construction of a different sort of world to facilitate player exploration, but the fundamental similarity remains.

However, unlike books and films, the worlds described by games are connected firmly to a fixed set of mechanics: the game structure. Games require rules to function: they are needed to determine what a player can and cannot do and to dictate the outcomes of these actions.[39] At their core, most games are machines dealing with quantifiable inputs and outputs. First person shooters calculate the effectiveness of weapons.[40] Stealth games keep track of the player's visibility and audibility. Strategy games tally a vast range of socio-politico-economic details to determine how a player's faction progresses. Role playing games use increasingly complex metrics to approximate human behaviour and dictate character interactions. Even visual novels use simple mechanics to plot the player's path through branching dialogues. Games must present a coherent and consistent world, often well beyond that which the player sees, to accommodate the agency provided to the player through the interactive qualities of the media.

The final element, game play, concerns how the player interacts with the game. This play can be based on game rules (learning the best attack combinations, trade strategies, optimising character creation) or on game world (roleplaying, customisation of appearance) or a combination of the

38 Aarseth, "Playing Research: Methodological Approaches to Game Analysis," 2.

39 Aarseth, "Playing Research: Methodological Approaches to Game Analysis," 2; J. McCall, "Navigating the Problem Space: The Medium of Simulation Games in the Teaching of History," *History Teacher* 1 (2012): 9–28, at p. 9; McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use".

40 R. Hunicke, M. LeBlanc, and R. Zubeck, "MDA: A formal approach to game design and game research," *Proceedings of the Challenges in Games AI Workshop, Nineteenth National Conference of Artificial Intelligence* (2004), 1–5, at p. 4.

two. They are not necessarily restricted to the game itself: Forums, Guilds, and Walkthroughs all form a part of this element and ultimately represent an extension of gameplay and interaction.[41] User modifications are a particular example of deep player involvement with the game through play, allowing players to substantially alter the image initially presented by the designers.[42] Some of these dynamics may be predicted or desired by designers, but often they arise and evolve unexpectedly. This element exists within games because of their interactivity, but is also strongly linked to the multi-authored nature of games. As players must be able to influence the events and outcome of a game, their input is an important and valid part of the game itself.[43]

These three elements are closely entwined and most successful games will generally ensure that they work in concert. Rules and world often inform each other.[44] If the game world through its narrative and visual cues tells the player that the dark knight is the most skilled warrior and most dangerous foe in the kingdom then defeating him should require a greater command of the game mechanics than was required to dispose of the obligatory rat-infested basement at the start of the game. Likewise, if a game seeks to encourage authentic roleplay dynamics then mechanics must exist to enable and encourage this.[45] These elements tend to overlap but they nevertheless form an important framework for the study of games.

Ultimately then, because of their interactive nature, games are substantively different from other media. Although they may present a fundamentally similar world to that of other media, the nature of games requires the presentation of a coherent and complete environment to be explored by the player. This fully formed world must be supported through consistent and functional mechanics which determine how the game reacts to player action. The combination of this world and structure allows and demands

41 McCall, "Video Games as Participatory Public History," 410–14.

42 Elliott, "Simulations and Simulacra," 19; McCall, "Video Games as Participatory Public History," 414–16.

43 McCall, "Video Games as Participatory Public History," 409.

44 J. Juul, *Half-real: video games between real rules and fictional worlds* (Cambridge, Mass, 2005), 163; D. Carr, "The Trouble with Civilization," in *Videogame, player, text*, ed. B. Atkins and T. Krzywinska (Manchester, UK; New York: New York, 2007), 222–36, at p. 225; Chapman, "Is Sid Meier's Civilization history?," 315.

45 Aarseth, "Playing Research: Methodological Approaches to Game Analysis," 3.

the development of gameplay as the player interacts with the game, engages in roleplay or the development of strategies, and evolves a reading of the game beyond that presented by its creators.

Games as Research Tools

The utility of Aarseth's framework within game studies is increasingly recognised,[46] as is its importance when using games as educational tools.[47] Aarseth held a restrictive view of the use of games in the examination of history, suggesting that the game world was the only game element relevant to this field.[48] However, I contend that the three elements of Aarseth's framework correlate very strongly with core elements of historical study. The game world allows the presentation of data. Game structure allows the explanation of historical analysis. Game play enables the inquisition of theories and analysis and the extension of play beyond the initial release of a game enables the adjustment or rebuttal of arguments: play allows historical debate. This, in combination with the consequences of the medium's interactive nature, could allow games to consider history in very different ways and in much greater depth than envisaged by Clyde et al. or even by Antley, Carvalho, Chapman, and McCall.

Data through Game World

The game world has the most obvious potential in supporting historical research, and indeed it is components of this element which are most typically suggested as research outputs. The game world is, by design, the most visible element of a game. In historical games it acts as an introduction to the period for the player and as a source of information.[49] A game world presents data through an interactive and relatively easily explorable

46 A.B.R. Elliott and M. Kapell, "Introduction: To Build a Past That Will 'Stand the Test of Time' - Discovering Historical Facts, Assembling Historical Narratives," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013), 9–12.

47 H.J. Brown, *Videogames and education* (Armonk, N.Y., 2008), 118.

48 Aarseth, "Playing Research: Methodological Approaches to Game Analysis," 3.

49 J.F.J. Alcázar, "The other possible past: simulation of the Middle Ages in video games," *Imago Temporis* 5 (2011): 299–340, at p. 311.

format. In doing so it shares several characteristics with existing scholarly digital techniques.

Visual reconstructions of built environments provided in the worlds of historical games could act as useful approximations of the urban spaces they represent and hence act as research tools. The learning and research utility of graphic reproductions of urban environments has been highlighted through several academic led projects including the *SmartHistory* flyovers of medieval Edinburgh[50] and St Andrews[51] and the intricate, expansive, and fully explorable model of ancient Rome produced by Nicholls.[52] These recreations of historical cities are significant as they provide a sense of space that cannot be equalled through written descriptions, overhead maps, contemporary images or even first-hand experience of surviving sites.[53] The concept of space is an important one for many areas of historical study. These reconstructions facilitate understanding population density: whether settlements were crowded or widely distributed. They can highlight the importance of particular buildings in the landscape: castles, cathedrals and fortified towers loom over surrounding buildings. The logic (or lack therof) behind the layout of settlements can make more sense when viewed from ground level. Clear lines of sight from city gates to cathedrals and palaces were an important and routinely visible method by which rulers could stamp their authority on a city. Furthermore, these reconstructions allow an independence of exploration,[54] facilitating research by allowing the player to select their own perspective. These digital reconstructions were designed with popular engagement and education in mind, but they can serve as research tools in much the same way as maps, charts and other diagrams: they allow the communication of information based on research in an innovative way and could support historical analysis and debate.

It is significant that both the *SmartHistory* flyovers and Nicholls' model have strong links to computer games. The *SmartHistory* flyovers

50 "Edinburgh 1544: Virtual Time Binoculars," *SmartHistory*.

51 B. Rhodes, "Reconstructing Pre-Reformation St Andrews," *St Andrews 2017* (2017).

52 M. Nicholls, "Digital Visualisation in Classics Teaching and Beyond," *Journal of Classics Teaching* 17, nº 33 (2016): 27–30.

53 Nicholls, "Digital Visualisation in Classics Teaching and Beyond".

54 Rhodes, "Reconstructing Pre-Reformation St Andrews".

were produced with the Unreal Engine,[55] while Nicholls' model has been connected to the production of an online game.[56] Numerous historical games already go to some lengths to reconstruct a faithful depiction of cities, often using similar techniques to the producers of these more scholarly ventures. For example, the creators of the *Assasssin's Creed* series used geographical surveys, surviving architecture, archaeological study and expert opinions in the recreation of medieval and early modern cityscapes.[57] Despite some significant shortcomings,[58] and the need to present an entertaining world, these imperfect models within popular games highlight the potential of this media to support academic research.

A game's world could also present other physical objects of value to researchers. In addition to its architectural reconstruction, *Assassin's Creed* showcases other material culture, most notably clothing and weapons.[59] The *Total War* series likewise presents military attire and weaponry, but also provides an impression of battlefield geography.[60] Texts and images can be incorporated as in game paraphernalia or connected through external links.[61] All of these elements are demonstrations of the presentation of data in an innovative and accessible manner. The data may be incomplete or misleading, but this nevertheless highlights the potential of digital games to support research. Visual representations of battlefields similar to those provided in *Total War* could be immensely valuable to military historians if these representations were thoroughly researched and sourced. Topographically accurate surveys presented in this format could inform analysis of the outcomes of battles.

55 "Edinburgh 1544: Virtual Time Binoculars".

56 Nicholls, "Digital Visualisation in Classics Teaching and Beyond".

57 S. Totilo, "One Man's Year Making Assassin's Creed II," *Kotaku* (2009); J. Hsu, "A Renaissance Scholar Helps Build Virtual Rome," *Live Science* (2010); Spring, "Gaming history," 212.

58 D.N. Dow, "Historical Veneers: Anachronism, Simulation, and Art History in Assassin's Creed II," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013); M. Komel, "Orientalism in Assassin's Creed: Self-orientalizing the assassins from forerunners of modern terrorism into occidentalized heroes," *Teorija in Praska* 51 (2014): 72–90.

59 Spring, "Gaming history," 212.

60 Spring, "Gaming history," 211.

61 Clyde, Hopkins, and Wilkinson, "Beyond the 'Historical' Simulation," 13; Chapman, "Is Sid Meier's Civilization history?," 318–19.

In a less visually appealing, but nonetheless important, manner a game's world has the potential to display a significant volume of research data through tables, charts and other mediums. Games require a complete range of data points to operate. In the case of historical computer games these data points often represent historical information. Particularly complex games, such as those of the grand strategy genre, rely on huge historical databases. A particular example is *Crusader Kings II* which incorporates a database of around 100,000 characters as the foundation of the game. This represents a vast and explorable repository of medieval figures. It has some fundamental resemblances to a number of academic research projects. *The Making of Charlemagne's Europe*[62] and the *Prosopography of Anglo-Saxon England*[63] have each produced searchable relationship databases of the individuals and locations listed in the charters of Charlemagne and from a range of Anglo-Saxon literary sources respectively. These databases are intricately detailed and are potentially invaluable research tools allowing the consideration and analysis of political and social links across Europe and England respectively.

Crusader Kings presents a historical database of characters and connections on an even greater scale than these two projects and this database can be interrogated both within the game and through the game files. Indeed, Nangle has produced a series of complex relationship network charts through the analysis of these files.[64] While many of the characters within this database are fictional placeholders, this is constructed around a core of diverse and often well-researched material. With more rigorous academic support and demonstration of sources this database could be transformed into a viable research tool presenting a complex and coherent web of relationships in an easily explorable manner.

Game worlds often perform a similar role to existing digital research tools, indeed in some cases games have inspired these methods. However, games tend to allow their users greater interaction with the subject matter. The *SmartHistory* flybys are useful, but follow a strict path. They do

62 "The Making of Charlemagne's Europe (768-814)," *Research Projects: King's College London* (2012); "Welcome!," *The Making of Charlemagne's Europe*.

63 "Home," *The Prospography of Anglo Saxon England*.

64 J. Nangle, "Deus Vult! Social Networks in Crusader Kings 2," *An Quant Ar Buile* (2017).

not allow the investigation of the medieval built environment provided by *Assassin's Creed*. The battlegrounds of the *Total War* series allow an exploration of the geography and troop compositions in a manner which cannot be matched by traditional maps. *Crusader Kings II* with its complex and detailed world permits the thorough exploration of an abstract medieval society in different ways from traditional academic approaches. As such, these game worlds could provide a similar yet distinct tool from other digital approaches. They could provide a more complete and interactive, if more abstract, vision of the past.

Analysis through Game Structure

While game worlds can present historical data, game structure offers a much more innovative and useful tool for looking at the past.[65] The game rules present the ideas and theories which have been used to construct this model through procedural rhetoric.[66] They create systems based explanations rather than simple narrative accounts.[67] Indeed, they must do this for the game to function.[68] Through the construction of these mechanics games may become closer to academic texts: by expressing these arguments through algorithms, the creators of these games conduct historical argument and compose elaborate systems of analysis to support this argument.[69] This analysis may be un-

65 Chapman, "Privileging Form Over Content," 42; McCall, "Navigating the Problem Space," 9; Elliott and Kapell, "Introduction: To Build a Past That Will 'Stand the Test of Time'- Discovering Historical Facts, Assembling Historical Narratives," 14; Elliott, "Simulations and Simulacra," 23.

66 Bogost, "The Rhetoric of Video Games"; Brown, *Videogames and education*, 118; I. Bogost, *Persuasive games: the expressive power of videogames* (Cambridge, Mass., 2010); Spring, "Gaming history," 215; A. Chapman, "Affording History: Civilization and the Ecological Approach," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013), 61–73, at p. 67; Carvalho, "Videogames as Tools for Social Science History," 812.

67 G. Frasca, "Simulation versus Narrative," in *The Video Game Theory Reader*, ed M. Wolf and B. Perron (New York, 2003), 221–35; W. Uricchio, "Simulation, History, and Computer Games", in *Handbook of Computer Game Studies*, ed. J. Raessens and J. Haskell Goldstein (Cambridge, Mass, 2005), 327–38; McCall, "Navigating the Problem Space," 9; McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use".

68 McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use"; Fullerton, *Game design workshop*.

69 Chapman, "Is Sid Meier's Civilization history?," 315, 319.

conscious,[70] but is nevertheless a form of history and very often is well rooted in historical scholarship. The core difference between the analysis produced within games and that provided in other media is that game mechanics, and hence the arguments they present, must be internally coherent and consistent and provide a holistic model for the worlds they support. While other media can certainly be used to present complex and intelligent historical arguments in an effective manner, they are not required to do so by their very nature.

The most typically cited examples of game mechanics representing historical arguments deal with large geopolitical issues and focus on the strategy game genre. The *Total War* series presents models of politics, society, and religion and in doing so presents historical theories.[71] The grand strategy games produced by *Paradox Interactive*, including *Crusader Kings II* and *Europa Universalis IV* develop arguments within the same areas.[72] The *Patrician* series presents a model of supply and demand.[73] *Civilization* presents complex, if somewhat unbalanced,[74] arguments about the rise and fall of great powers.[75] The ability of games of this genre to engage students with historical arguments is well documented[76]

70 Pobłocki, "Becoming-state: The bio-cultural imperialism of Sid Meier's Civilization," 164; Chapman, "Is Sid Meier's Civilization history?," 320.

71 R.D. Peterson, A.J. Miller, and S.J. Fedorko, "The Same River Twice: Exploring Historical Representation and the Value of Simulation in the Total War, Civilization and Patrician Franchises," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013), 33–48, at pp. 41–42; Spring, "Gaming history," 211.

72 T. Apperley, "Modding the Historians Code: Historical Versimilitude and the Counterfactual Imagination," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013), 185–98; Spring, "Gaming history," 211.

73 Peterson, Miller, and Fedorko, "The Same River Twice," 42.

74 C. Douglas, "'You Have Unleashed a Horde of Barbarians!': Fighting Indians, Playing Games, Forming Disciplines," *Postmodern Culture* 13, nº 1 (2002); R. Mir and T. Owens, "Modeling Indigenous Peoples: Unpacking Ideology in Sid Meier's Colonization," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013), 91–106; S. Ortega, "Representing the Past: Video Games Challenge to the Historical Narrative," *Syllabus* 4, nº 1 (2015): 1–13, at p. 3; E.J. Bembeneck, "Phantasms of Rome: Video Games and Cultural Identity," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott (New York, 2013), 77–90; D. Ford, "'eXplore, eXpand, eXploit, eXterminate': Affective Writing of Postcolonial History and Education in Civilization V", *Game Studies* 16, nº 2 (2017).

75 Peterson, Miller, and Fedorko, "The Same River Twice," 43.

76 A. Whelchel, "Using Civilization Simulation Video Games in the World History Classroom," *World History Connected* 4, nº 2 (2007); McMichael, "PC Games and the Teaching of History"; J.K. Lee and J. Probert, 'Civilization III and Whole-Class Play," *The Journal of Social Studies Research* 34, nº 1 (2010), 1–28; Pagnotti and Russell, "Using Civilization IV to Engage Students in World History Content"; Ortega, "Representing the Past".

and they have substantial potential to communicate research theories.[77] With greater depth of research and more formalised analysis and referencing similar games could be produced to present nuanced and effective scholarly arguments.

Arguments posited through game mechanics are not restricted to structural or 'great man' history, they can also provide arguments in other fields. *Assassin's Creed* provides a ground level view of society beyond the ruling elite in several periods of history presenting arguments about how these societies functioned while highlighting the personal impact of pivotal events.[78] Settlement management games such as the *Caesar* series and *Banished* create arguments about social dynamics but also regarding environmental history through rules governing agriculture and consumption.

Debate through Game Play

The data displayed through a game's world and the varied arguments presented through its structure may be interrogated through play. Several authors have noted the limitations game structure places on a game's presentation of history: as a working model must be constructed for the game to function, the game's mechanics can only display a singular viewpoint.[79] However, while this does mean that a game's mechanics are not well suited to present varied and conflicting arguments, it does not follow that games cannot be used to discuss these issues. Where the game world can present information and game structure demands the portrayal of functioning, if simplified, arguments, gameplay allows these arguments to be examined, tested, and challenged. Critical gameplay could allow the player to observe the limitations or even shortcomings of the data presented through the game world and the analysis presented by the game structure.

Criticism of historical accuracy in games very often represents a (somewhat) critical reading of the data presented through the game's world. Historical accuracy is a recurrent theme in the consideration of historical games

77 Chapman, "Affording History," 322–26.

78 Spring, "Gaming history," 212.

79 Uricchio, "Simulation, History, and Computer Games," 328; Galloway, *Gaming*, 104; McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use".

by designers, players, and historians.[80] While the concept is nebulous and often distracts from deeper discussion of games these criticisms are relevant here.[81] By highlighting perceived shortcomings in the game world, players criticise the presentation of data within the game and, by extension, criticise the data which the creators choose to present. These criticisms are often superficial and do not consider the broader implications of design decisions regarding this data. Nevertheless, they represent an informal type of historical debate in a format which could be well suited to more academic discussion.

Criticism of mechanics is less common, but may represent a deeper consideration of the arguments presented through a game's structure. Ortega has highlighted criticism of the expansionist tendencies encouraged by *Civilization V*: players (in this case Ortega's students) recognise the ahistorical outcome they produce.[82] He notes a demand for decline mechanics to balance this expansion and more closely mirror historical outcomes.[83] Through the development of these criticisms through play the players engage with the arguments presented through the game rules and mirror academic criticisms of the models used within *Civilization V* and similar games.[84] The game may present one particular view of history, but this does not prevent the scholarly debate or dismissal of this viewpoint. By raising these criticisms in a more formal manner gamers and designers could discuss the historical arguments presented in games in the same way that scholarly historians discuss arguments posed in monographs and articles.

The interactive nature of games could facilitate this interrogation. As games demand engagement with their mechanics to progress, players are obliged to conduct a close reading of the argument posited by a game's

80 D. Floyd and J. Portnow, *Historical Games - Why Mechanics Must Be Both Good and Accurate*, Extra Credits; Champion, *Critical Gaming*; Copplestone, "But that's not accurate".

81 S. Poole, *Trigger happy: the inner life of videogames* (London, 2000), 77; Elliott and Kapell, "Introduction: To Build a Past That Will 'Stand the Test of Time'- Discovering Historical Facts, Assembling Historical Narratives," 9–10; J. McCall and A. Chapman, "Discussion: Historical Accuracy and Historical Video Games (Part 1)," *Gaming the Past: Historical Video Games in the Classroom and Beyond* (2017).

82 Ortega, "Representing the Past," 2.

83 Ortega, "Representing the Past," 4.

84 Whelchel, "Using Civilization Simulation Video Games in the World History Classroom"; McMichael, "PC Games and the Teaching of History," 214.

creators. Rather than narrowing the utility of games as historical tools this quality could realign their value. Through play, gamers may identify inconsistencies within game worlds and structures. For example, *Assassin's Creed II* demands the player explore the digital representations of the built environments of of several cities of the Italian renaissance. To progress the plot, the player must traverse the streets and rooftops of these environments, observing key locations and individuals from diverse angles. This has encouraged engagement with the real historical environments on which these digital recreations are based which has led to criticism of their shortcomings, such as the anachronistic representation of the façade of Santa Croce in Florence within the game.[85] Likewise, through their construction of strategies to progress within a game, players may expose exploits within game mechanics highlighting logical flaws in the game's arguments which allow unintuitive behaviour to allow successful results. The player interrogation of *Civilization V* reported by Ortega and its highlighting of the shortcomings of the game's representation of imperialism and expansionism was driven by a desire to win the game.[86] The interactivity of games demands the player's engagement in a different manner from academic literature and could prompt the investigation of different arguments and avenues of thought.

The collaborative and ongoing authorship of many games could allow the proposition and construction of counter-arguments in a ludic format. Games are increasingly released in an unfinished or semi-finished state. Early access and Beta Testing allows the interrogation of a game's world and structure prior to release and feedback from this play is incorporated into the published version of the game. This is in effect the adjustment of the data and arguments presented by the product. After release, designers continue to adjust these data and arguments through patches, downloadable content, and formal expansions. The substantial downloadable content available for games like *Crusader Kings II* represents numerous iterations, expansions and rebuttals of the core arguments presented by the game. These are driven in part by a desire to improve game balance and player experience but

85 Dow, "Historical Veneers: Anachronism, Simulation, and Art History in Assassin's Creed II," 220–21.

86 Ortega, "Representing the Past".

refining mechanics and introducing new elements to provide a clearer and more nuanced image and argument about the period form a fundamental element of this continued development. Through appropriate criticism and research this could be an academically sound form of ongoing debate.

Players could take part in this negotiation of arguments directly. At the most basic this would be a matter of adjusting settings within the game: tweaking mechanics and data to provide a vision of the past which the player feels to be more authentic. The proliferation of user modification facilities built into many historical games enables players to adjust these data and arguments more thoroughly without recourse to the developers.[87] They become creators of the game and hence creators of history. With a critically created game, they could become creators of academic history.

As a result, modern games are often evolving and mutating texts. Designers can rebalance play or add new content.[88] Spring has highlighted the iterative nature of game design and its similarities to the traditional historical process, suggesting that the production of a scholarly game requires the revision and reworking of arguments and hence mechanics throughout the design process.[89] However, the collaborative and ongoing authorship of games allows the extension of this process beyond the initial release of the game. Players themselves can alter the appearance and rules of a game and through this could engage in debate regarding the data and analysis represented therein.

The following case study will argue that from an academic perspective this means that games are not merely representations of data or arguments or even a means of exploring theories. They are living documents which could allow historical debate. If gameplay demonstrates a questionable mechanic or an unexpected outcome, its creators or players may take steps to challenge and improve the model used by the game: they could elaborate and develop the theory represented by the game mechanics. In this way, players, through their modification of the game, could conduct historical argument in the same way as the creators of the game. The example here

87 McCall, "Video Games as Participatory Public History," 414–16.

88 Hunicke, LeBlanc, and Zubeck, "MDA: A formal approach to game design and game research," 4.

89 Spring, "Gaming history," 218.

demonstrates the presentation of data, development of arguments, and creation of counterarguments in an informal manner, but there is little reason why all of these elements could not be conducted in a more scholarly style through a similar game. If this is the case historical games should therefore be viewed not only as an output of history, but as a process by which historical arguments are developed, challenged, and revised.

Case Study: *Mount and Blade: Warband*

The evolving representations of combat in *Mount and Blade: Warband* provides a valuable if informal example of the full historical process outlined above. Within the game players act as the leader of a mercenary warband in a fictional world named Calradia with strong parallels to Medieval Europe of the twelfth or thirteenth century. Play is sandbox with no fixed victory conditions or score, the player can focus on trade, banditry, military service under one of several rulers, or competition in martial tournaments. They can become vassals of rulers holding their own lands or even establish kingdoms of their own. Gameplay is a hybrid of first person combat, roleplay, pauseable realtime strategy, and economic management. Through these varied and overlapping elements the game presents a range of information and several arguments about the medieval world, the most prominent of which relate to combat.

First person combat is a core element of *Mount and Blade* and the game world presents substantial information pertinent to warfare. A huge variety of weapons and armour are provided with graphical models based on examples from the medieval period. Soldiers of different factions are presented based closely on the troops employed across Europe, the Steppes and the Middle East. Heavily armoured knights appear in the Swadian faction which is based largely on the forces active in Germany in this period. Lightly equipped horse-archers based on those used by the Mongols and other steppe tribes of the central and later middle ages are available to Khergit forces. Beyond these historical influences, a great deal of attention has been given to creating visual models of castles and fortified towns which are in keeping with the setting and its medieval basis. The game world creates a vision of medieval armies and of their environment. It selects and presents historical data.

Each item of equipment is assigned a series of statistics. Some of these are concrete addressing the item's dimensions, weight, or whether it was designed to slash, pierce or bludgeon an opponent. Some are more abstract presenting the speed at which the weapon can be used to attack or how strong a character must be to effectively use the weapon. Characters possess quantified physical attributes – including strength and agility - and skills – such as their ability with different types of weapon. Horses have statistics addressing their speed, manoeuvrability and durability. A vast amount of information is presented, and this again represents the selection and presentation of historical data.

These statistics tie the data of the game world to the mechanics of the game structure. Interactions between these values are dictated by rules which determine the effectiveness of a particular weapon in the hands of a particular character under particular circumstances. Strong, well trained warriors wielding heavy weapons deal more damage to their opponents than weaker, untrained peasants armed only with farm tools. Lightly armed and armoured characters move faster than more heavily encumbered rivals. Horsemen are considerably faster on flat open terrain than infantry, but lose this advantage in steeper or more broken landscapes. These mechanics equate to some basic but coherent arguments about warfare in the middle ages.

These mechanics also represent and allow some more detailed analysis regarding medieval warfare, most notably through the application of the physics based system on which combat is based. Damage dealt by weapons is determined in part by common abstract methods such as the attacker's strength and the effectiveness of the weapon, and the defender's toughness and armour. But in addition to these common abstract gaming mechanics, *Mount and Blade* determines damage through the speed at which the attacker is moving.[90] The player can increase the damage they deal by charging their opponent. When attacking from the saddle while moving at full speed damage increases dramatically.

In deploying these mechanics, the creators of *Mount and Blade* present a historical theory: Medieval troops were more effective when they charged, and this was particularly the case for mounted warriors. This conforms to popular understanding and traditional academic interpretations

90 *Mount and Blade: Warband Manual* (2010), 46–47.

of medieval warfare, which focus on the dominance of armoured knights on the battlefield.[91] In the game horsemen, especially knights, are incredibly effective as long as they are able to maintain momentum. If terrain or press of troops prevents their movement they can easily become vulnerable. The core theory and its justification are rooted in a school of historical thought and the game demonstrates this through its physics engine. The creators of the game have presented a historical argument.

Through play the game's audience have interrogated this argument. This is reflected through numerous forum threads which highlight the shortcomings of the model (and hence the argument) used by the game.[92] If handled well, even a small group of knights can systematically demolish much larger forces of foot soldiers in all but the roughest terrain. The reasons for this rest with the mechanics and the limitations of the argument which they represent. There is no fatigue function. Troops will always move as quickly and fight as effectively as they did when they first entered the battle. As a result, knights never lose their potential for mobility and hence retain their ability to deliver powerful charges. Likewise, combat effectiveness is not reduced by injury. The horse and its rider can sustain a fixed amount of punishment before expiring, but until this point they operate just as effectively as when they first entered combat. This issue is further aggravated by the restrictive nature of the tactics employed by computer controlled opponents. The AI tends to form its forces into wide but shallow lines which are ill equipped to stop charges. The shortcomings of the model used by the game highlight gaps in the theory presented through its structure. By highlighting these issues, players provide a critique of the analysis presented by the game.

In continuation of this critique players have developed counter arguments by adjusting *Mount and Blade*. A substantial number of user modifications have been produced to address perceived shortcomings within the

91 J.F. Verbrugen, "The Role of the Cavalry in Medieval Warfare," *Journal of Medieval Military History* 3 (2005).

92 Variton, "Swadian knights overpowered? solutions?," *Tale Worlds* (2010); Too_Weak_to_fight, "Why are swadian knights so OP?," *Tale Worlds Forum* (2011); Jarlaxe, "Are swadian knights good?," *Steam Community Discussions, Mount & Blade: Warband* (2017).

game or to expand its scope. Several of these user modifications include elements which counter the power of cavalry charges to some extent. *Brytenwalda* is a total conversion modification, making changes throughout the game. It transposes the setting from the fictional Calradia to the British Isles in the seventh century, but also makes substantial changes to combat, diplomacy, economy, and numerous other elements within the game. Of most significance here, *Brytenwalda* introduces the concept of fatigue. Troops become tired as they perform strenuous activities such as running or fighting. This reduces their capacity for combat causing them to move more slowly and to deal less damage. This in turn curbs the power of cavalry charges, it is no longer viable to charge a group of knights around the battlefield indefinitely. *Brytenwalda* adjusts *Mount and Blade*'s game mechanics and hence elaborates on the original game's historical argument.

The *Formations and AI* user modification counters the issue of overmighty cavalry in a different way. This mod presents new options to players and their computer opponents when organising troops, enabling the deployment of deeper formations of foot soldiers which are more able to withstand a cavalry charge. The creators of the forthcoming *Mount and Blade II: Bannerlord* have taken a similar approach, developing more complex battlefield AI on a tactical level.[93] Like *Brytenwalda*, *Formations and AI* and *Mount and Blade II* augment the mechanics of the original *Mount and Blade* and hence nuance the core game's argument.

The creation, play, and modification of *Mount and Blade* therefore represents the presentation of historically grounded data and arguments and the examination, evaluation and modification of this information and analysis. The designers and players of the game contribute to this discussion and in doing so are in effect conducting history. The fictional nature of the game setting does not make these discussions redundant: the broad scope of the discussion outlined above is easily applicable to historical case studies. Indeed, expansions to the game have retained the core game mechanics, but moved the setting to Viking Era Britain, seventeenth century

93 R. Scott-Jones, "How Mount & Blade 2: Bannerlord simulates its huge medieval battles," *PC Games News* (2017).

Eastern Europe, and Europe during the Napoleonic Wars. The game is very different from traditional academic outputs not only in its presentation of information and arguments, but also as the play and modification of the game represents an ongoing and evolving discussion.

The creators, players, and modders of *Mount of Blade* are generally not academic historians. The data, analysis and debate they create through the game are often incomplete, ad hoc, or based on a sparse or non-existent source base. The game and its mods are not intended as academic tools or outputs, but rather as entertainment products. However, the depth and complexity of these elements as represented through game world, rules and play demonstrates the potential of similar games to address fundamental historical issues through more careful and well resourced research and more thoroughly evidenced source material.

Difficulties and Shortcomings

Digital games could therefore act as viable supporting tools for the presentation and discussion of history in a formal manner. There are nevertheless several issues which must be addressed when considering games as potential research tools. These concerns do not supersede the potential value of games in support of historical study, and there are several ways in which these issues may be resolved or at least alleviated. However, these difficulties must be acknowledged and understood.

Perhaps most importantly, there is a substantial difference between the goals of the creators of commercial games and those of academic scholarship. Even when creating games which revel in their historical accuracy or authenticity, designers are under pressure to produce a product which is entertaining, conforms to the world view of their audience, and, ultimately, will sell.[94] As Salvati and Bullinger correctly note, this means that game designers are typically obliged to privilege "story, genre, and details over critical analysis or the production of new historical knowledge".[95] While enjoy-

94 McCall, "Video Games as Participatory Public History," 407.

95 A.J. Salvati and J.M. Bullinger, "Selective Authenticity and the Playable Past," in *Playing with the past: digital games and the simulation of history*, ed. M. Kapell and A.B.R. Elliott

ability is far from incompatible with academic outputs, any viable academic game would have to derive its entertainment value as a product of engaging critical analysis. There would certainly be an audience for this sort of game and they could represent the logical conclusion of the player led drive for authenticity in historical games, but this audience may be a different or smaller cohort than more general consumers of commercial games.

Genre conventions may also present barriers to the production of academic games. Salvati and Bullinger note that shooter games such as *Call of Duty* and *Medal of Honour* tend to do less to prompt historical engagement and debate than strategy games such as *Civilization* as these shooter games use historical authenticity to immerse their players in the game world rather than to drive a narrative or to power mechanics.[96] Chapman has developed a valuable model of this varied use of historical authenticity in games presenting a scale between Realist Simulations, which use authenticity to immerse the player, and Conceptual Simulations, which focus instead on developing historically authentic rulesets.[97] Commercial shooters and role playing games tend to exist at the Realist end of this spectrum which undermines their ability to present arguments and hence their use as academic games. However, this may be more a product of convention than necessity. Much of mount and blade is conducted as a shooter, but the format of the game nevertheless has substantial potential as a discussion of history. Likewise, strategy games such as *Crusader Kings II* make extensive use of a roleplaying system which augments their game mechanics and the arguments this produces about the medieval world.

Beyond this, different individual players and groups of players interact with games in different ways.[98] Despite diverse and extensive discussion on game forums which is often well informed and sometimes demonstrative of elaborate critical thinking, the majority of players do not engage with historical games through an academic lens. The full exploration of a custom built and academically rigourous historical game requires a player, or

(New York, 2013), 153–67, at p. 153.

96 Salvati and Bullinger, "Selective Authenticity and the Playable Past," 156–57.

97 Chapman, *Digital games as history*, 59–72.

98 Carr, "The Trouble with Civilization," 225.

group of players, who is willing and able to engage not only with the history presented within the game, but with its sources and with other materials. Finding an appropriate audience may be a challenge for games of this nature, but given the interest in historical digital games within and outside the academy this should not be insurmountable.

Likewise, only a small fraction of players engages with the creation of user modifications. The importance of these modifications to facilitate historical debate within games demands the presence of a player base which is comfortable adjusting the world and rules of the game and thereby creating counter propositions and arguments. A potential resolution to this issue is the training of a target audience in the skills necessary to modify the academic historical game, but a more effective method would be to ensure that any such game could be easily and intuitively modified without any specialist skills.

At a fundamental level, games present an abstract picture of the past.[99] Details must be simplified and standardised to fit within the world model. Missing information must be created to avoid gaps in the game world. The unknown or unknowable must be constructed from reasonable assumptions or conclusions. Information must be presented in an accessible manner which can easily lead to further simplification. Games do not model the past but rather a modern image of the past extrapolated from a handful of research points.[100] This obviously creates an issue in reconciling games with academic historical research. Fabrication of data, or even estimation is often seen as undermining the validity of games as historical tools. However, as several authors have noted, this is what all historians do in order to produce images of the past.[101] We cannot know all the details as sources have not survived or are contradictory; we have to extrapolate the most likely scenario from this limited information. Conversely, we cannot conduct in depth research into every source relevant to a period. We must rely on the knowledge and analysis of other historians to build our

99 McCall, "Video Games as Participatory Public History," 407.

100 Elliott, "Simulations and Simulacra," 29–31.

101 Carr, *What is history?*, 9; McCall, "Historical Simulations as Problem Spaces: Criticism and Classroom Use"; Chapman, "Privileging Form Over Content," 43–44; Chapman, "Is Sid Meier's Civilization history?," 322–25.

models. The world and structure of games at a root level are not so different from academic texts: they present extrapolations from limited data in order to construct complex arguments. A further issue is that of citation. Designers do not typically demonstrate the origin of their information.[102] This substantially undermines their utility as research tools, but in terms of the basic images and statistics presented by a game this is fairly easy to remedy. The *Civilization* series has employed an in game encyclopaedia (the *Civilopedia*) since the first iteration of the game. This encyclopaedia provides basic, and often problematic, information about military units and urban improvements. As Carvalho notes,[103] *Crusader Kings II* cites external sources in support of many of the characters appearing within the game, providing in game hyperlinks to relevant Wikipedia articles. While both of these approaches are still far from academically rigorous, they demonstrate the feasibility of providing evidence of academic research within a game. All that is needed are links to more reputable sources.

Explanations and justifications of game mechanics, and hence game arguments, would be more difficult implement. Rigorous historical justification of game rules will typically require more detail and hence more text than the identification of the origin of data. This could be achieved in game: the *Civilopedia* contains information about game rules and occasional justifications for the enforcement of these rules. However, over-reliance on these textual solutions can potentially break up game play and hence undermine much of the unique potential of games as research tools. A more intuitive and less intrusive method of providing this information could increase the utility of games in historical scholarship.

More significantly, the amount of information conveyed to the player must be carefully managed. Concealment of game mechanics from the player can undermine the potency of the arguments represented by the game.[104] Conversely, an over-abundance of data and mechanics can obscure the key points and arguments of a game. Simpler and more open games could al-

102 Carvalho, "Videogames as Tools for Social Science History," 811.

103 Carvalho, "Videogames as Tools for Social Science History," 811–12.

104 Antley, "Going Beyond the Textual in History".

leviate this issue, focusing on a small group of interconnected arguments presented in depth with almost all mechanics on display. Games do not have to be mechanically complex to provide useful explorations of history. In fact, more straightforward mechanics could create clearer and more focused arguments. They could also support interrogation and alteration of these arguments by facilitating easier modification.

Finally, there are also resourcing and financial issues surrounding the use of games as research tools. Carvalho has observed the substantial expense of producing a scholarly game and the difficulties in producing a collaborative project with input across very different disciplines.[105] To a certain extent these issues can be resolved through the simplification of game design. However, the divergence in skillsets between game creation and historical research dictate that the production of games as research tools will typically necessitate interdisciplinary collaboration and a substantial commitment of time and resources.

Conclusion

The unique nature of games allows them to present historical data, analysis, and debate in non-traditional but potentially effective ways. As argued above, Aarseth's model provides an important framework which can be readily adapted beyond its author's original intent. The world presented by historical games is built on and displays historical data whether in the form of visual reconstructions or statistical records. Their structure develops this data into historical arguments and analysis. This allows the game's players and designers to investigate these arguments through play and ultimately to challenge the analysis presented in the game through modifications of its world and structure. These three elements are of fundamental importance to historical study and although games express them in very different ways and in an informal manner this does not in itself undermine their validity as academic resource tools.

The inclusion of gameplay and the consideration of players as authors counters Clyde et al.'s concerns regarding the ability of games to portray

105 Carvalho, "Videogames as Tools for Social Science History," 818–19.

historical arguments and historiography.[106] While there are certainly difficulties in presenting historiographical trends or multiple viewpoints within the world and structure of a game, game play facilitates the discussion and debate of these issues.[107] This capacity for debate is of fundamental importance to the value of games as research tools and ease and clarity of modification should hence be a central element in the design of such games.

Games present a number of challenges in creating academically rigorous outputs. However, these challenges can largely be overcome through a more stringent and open creation process. This more careful and thorough approach is also of value to players and creators – it can help support demands for greater authenticity within games, potentially boosting sales and creating a more engaging and immersive experience.

Some of these practical issues could be resolved through the use and development of board games. These games share many of the properties of digital games and, as Antley notes, board games have great potential as historical tools: the nature of this genre requires rules to be simple enough for players to understand and enact, and also demands that these rules be clearly visible to players.[108] This not only provides the potential for clearer communication of historical arguments through more open mechanics, but could also facilitate debate through easier modification. While an understanding of how arguments and mechanics interact would be required, there would be no corresponding need for complex and technical computing skills or the devotion of substantial resources. Players of historical board games could conduct history in much the same way as players of digital games. There are some differences in the capacities of the two genres – board games are less capable of presenting data and images for example – but the relative accessibility of board game design could be hugely beneficial to their utility as research tools and processes.

A viable process for such a prototype could involve the construction of a simple board game by a small interdisciplinary group spanning the

106 Clyde, Hopkins, and Wilkinson, "Beyond the 'Historical' Simulation".

107 Antley, "Going Beyond the Textual in History"; Chapman, "Is Sid Meier's Civilization history?," 316–18.

108 Antley, "Going Beyond the Textual in History".

fields of history, game design, and game studies. This game would focus on a single issue within a finite historical event with a relatively substantial corpus of primary and secondary sources. A specific research question and initial statement of argument would be formulated. Relevant data drawn and extrapolated from the primary sources would form the basis of the game world and mechanics representative of the argument would be created. The game would then be released to a larger group of historians familiar with the game's theme and its textual and historiographical background. These historians would play the game and critique its world and mechanics and hence the data and arguments they represent. On the basis of this feedback and debate, new iterations of the game would be produced to reflect nuances in analysis and development of couterarguments. The game would represent a research output, but would also facilitate ongoing conduct of informed historical debate.

Ultimately, digital games can never replace traditional academic outputs. They are too different as media. However, games could provide new perspectives on historical data and arguments by allowing their presentation and exploration in a different and perhaps more thorough manner. More significantly, through play these games could allow the discussion and development of these data and arguments. Games could be more than research outputs, they could represent research tools and processes in and of themselves.

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