

Institution: University of Cambridge		
Unit of Assessment: UoA 30		
Title of case study: Historical games: Creating a new model for collaboration with the gaming industry		
Period when the underpinning research was undertaken: 2005-present		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Lauren Kassell	Professor	01.10.2000-present
Helen Anne Curry	Senior Lecturer	01.09.2012-present
Period when the claimed impact occurred: September 2014-present		
Is this case study continued from a case study submitted in 2014? No		
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>Historians of science and medicine at the University of Cambridge, in collaboration with computer game developers, have demonstrated the value of historical research to the creation of ground-breaking game narratives, and have established new models for how academics can collaborate with the gaming industry. Lauren Kassell's research on the casebooks of sixteenth-century astrologer Simon Forman formed the basis of the genre-pushing <i>Astrologaster</i>, which has been purchased by over 800,000 people. Helen Anne Curry's research on amateur plant breeding provided content for <i>Seed</i>, an award-winning virtual reality experience. In both cases, historical scholarship led to innovative and academically informed game content. In turn, the games have generated sales revenue and prize funding for the partner companies. <i>Astrologaster</i> has been part of a games bundle that has generated over USD8 million for racial justice charities.</p>		
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Simon Forman's casebooks document the hopes and worries, many of them health related, of thousands of Elizabethan Londoners. Kassell is the world expert on these documents. Her monograph [R1] demonstrates the extent to which Forman used his astrological expertise to secure his patients' trust. In a survey of practices of recording and preserving casebooks before 1700 [R2], she historicised medical writing practices, established the extent to which casebooks shaped medical encounters, and demonstrated that while Forman's casebooks, and those of his protégé Richard Napier, were typical of the time, they are exceptional in the numbers of consultations they record and the fact that they survive. She used casebooks to understand how practitioners and their patients negotiated shared and competing understandings of fertility [R3]. From 2008 to 2019, she headed the Casebooks Project, a team of scholars who transformed Forman's and Napier's paper archive into a digital archive. This work produced a digital edition with a critical introduction, an image archive, a dataset, a selection of five hundred fully transcribed cases, and a body of public engagement [R4]. This work inspired and informed the development of <i>Astrologaster</i>.</p> <p>From her arrival in Cambridge in 2012 until 2016, Curry led a programme of research on the history of plant breeding, giving particular attention to early techniques of genetic manipulation such as radiation and chemicals. Among other findings, this research revealed a heretofore unexamined community of amateur experimentalists who conducted their own investigations in plant breeding with an unusual array of genetic tools, including x-rays, chemicals, and nuclear radiation [R5, R6]. Whereas historians and others have seen genetic technologies as sophisticated tools deployed in laboratories by trained experts, at least until the advent of twenty-first century DIY biology, Curry's publications document a rich tradition of amateur engagement with genetic technologies in homes and gardens. Accounts of rose breeders scraping radium from clock dials to treat developing buds, marigold lovers attempting to hybridise incompatible varieties with the aid of a chemical bath, and gardeners purchasing 'atomic-irradiated seed' all testify to the existence and extent of this engagement. These accounts served as inspiration and provided essential historical context for <i>Seed</i>.</p>		

3. References to the research (indicative maximum of six references)

[R1] Kassell, L. (2005). *Medicine and magic in Elizabethan London: Simon Forman, astrologer, alchemist, and physician*. Clarendon Press. ISBN: 9780199279050.

[R2] Kassell, L. (2014). Casebooks in early modern England: Medicine, astrology and written records. *Bulletin of the History of Medicine*, 88, 595-625. [\[DOI\]](#)

[R3] Kassell, L. (2018). Fruitful bodies and astrological medicine. In N. Hopwood, R. Flemming, L. Kassell (Eds.), *Reproduction: Antiquity to the present day* (pp. 225-240). Cambridge University Press. [\[DOI\]](#)

[R4] Kassell, L., Hawkins, M., Ralley, R., Young, J., Edge, J., Martin-Portugues, J. Y. and Kaoukji, N. (Eds.). *The casebooks of Simon Forman and Richard Napier, 1596-1634: A digital edition*. [\[Link\]](#)

[R5] Curry, H. A. (2016). *Evolution made to order: Plant breeding and technological innovation in twentieth-century America*. University of Chicago Press. ISBN: 9780226390086

[R6] Curry, H. A. (2014). From garden biotech to garage biotech: Amateur experimental biology in historical perspective. *British Journal for the History of Science*, 47, 539-565. [\[DOI\]](#)

All pieces of underpinning research have undergone peer review, with the exception of [R4]. [R4] is a ground-breaking digital edition, funded via a series of grants from Wellcome totalling almost GBP2 million. Therefore, all of the pieces of underpinning research meet the 2* threshold.

4. Details of the impact (indicative maximum 750 words)

Overview: Kassell's collaboration with the developer Nyamyam, and Curry's collaboration with the developer All Seeing Eye - both facilitated by The Wellcome Trust - have together established an influential template for the role of historical scholarship in developing new game content, and for broader links between academia and the gaming industry. These collaborations derive jointly from the HPS Department's culture of engagement, from its research priorities focused on medical and environmental topics, and from its policy of encouraging exploratory conversations with individuals and institutions outside of academia.

Astrologaster

Nyamyam (<http://nyamyam.com/>) released the game *Astrologaster*, a comedy written in the stars in May 2019. It takes inspiration from Simon Forman's casebooks. The Casebooks Project team - led by Professor Lauren Kassell and funded by The Wellcome Trust - acted as historical consultants for the game. Jennifer Schneiderei, developer at Nyamyam, summarises Kassell's contribution:

'Astrologaster was inspired by Professor Lauren Kassell's research and would not exist without her. Her work enabled us to understand Elizabethan medical encounters and made it possible for us to design a game that captured historical social dynamics. ... Astrologaster is the first game to be developed in dialogue with a historical research project. It establishes a new model for making games. The industry is concerned about a tendency towards homogeneity. Interactions like this one foster the production of innovative work.' [E8]

Forging new computer game genres. An article in *Prospect* notes Kassell's role not merely in developing this specific game, but in laying out a new and more sophisticated genre for computer games in general. It profiled Schneidereit, noting that:

'[Schneidereit's] latest game, currently in development, is *Astrologaster*, a period comedy developed with the writer Katharine Neil that draws on the work of the Cambridge academic Lauren Kassell. ... It's a fascinating mixture of historical enthusiasm and subversive modern comedy, which its creator intends to offer "an interesting and unusual look at history; at the little people, not the kings and queens." It's also about as far away in spirit from the Hollywood-Grecian bluster of *Assassin's Creed: Odyssey* as you can imagine.' [E1]

A later article in *THE* focuses on *Astrologaster* as an example of a game that is having impact by transforming how academics think about what it means to make their work accessible [E2]. That article quotes Iain Dodgeon, director of OKRE (Opening Knowledge across Research and Entertainment, a new UK-based organisation bringing the research and entertainment sectors closer together) making the case that 'Games can help you relate to research through direct experience': *Astrologaster* is one of Dodgeon's primary examples.

Grounding game play in history. Since meeting the team from Nyamyam at a Wellcome-organised workshop in September 2014, Kassell's Casebooks team has provided selections of material from Forman's casebooks and information about his methods and suggested further readings. They commented on Nyamyam's drafts of successful funding applications from the European Union's Creative Europe Media and The Wellcome Trust. They read drafts of the character summaries, storylines and scripts and provided feedback about their historical accuracy, encouraging the uses of humour and deliberate anachronism, rather than romanticised nostalgia, to challenge players to think about meanings of health and illness. From the perspective of Casebooks, working on *Astrologaster* contributed to their thinking about the performative nature of the casebooks; about how to (re)present the casebooks in the project's search interface; and about innovative ways to communicate the history of medicine to both academic and non-academic audiences.

Delivering historical research to new audiences. The game was on *Shack News's* list of the twenty most anticipated indie games of 2019 [E3]. It received four-star reviews from the *LA Times* and the *Guardian*, and has been praised in the gaming press and in playthroughs. It was later one of just five games to feature in the *Guardian's* roundup of culture in 2019 that might 'make you feel less terrible about the UK election' [E4, E5]. Playthroughs of *Astrologaster* have been watched by over 1 million people. Games players have made hundreds of positive comments about the game at Nyamyam's twitter feed: for example one Tweeter writes: 'How am I only just discovering *Astrologaster*? It combines my two loves – gaming and medical history! This is perfect!!' or @Blackcom666 who tweeted, 'I've finally played #astrologaster and oh, wow! The audio quality, the art direction, the researches and style behind the writing. It's an amazing game which manages to surprise me ... Great job to the team @nyamyamgame' [E6].

Generating charitable funding. As of July 2020, [Text Redacted for Publication] people have purchased the game and generated revenue directly for Nyamyam. However, this number is dwarfed by the 800,000 people who have purchased *Astrologaster* as part of a large bundle of games made available (for a minimum donation of USD5) at itch.io in aid of racial justice and equality. The bundle as a whole has now raised in excess of USD8 million for the chosen charities. [E7]

Seed

Seed took shape with support from the Epic Games and The Wellcome Trust, the two sponsors of the 'Developing Beyond' competition. In February 2017 All-Seeing Eye was chosen as a semi-finalist and awarded USD15,000. In July 2017 they were selected as one

of three finalists and awarded a further USD60,000. In February 2018, the game (which remains in prototype as of July 2020) took the top prize and USD150,000 at the final judging [E9].

The Associate Creative Director of All Seeing Eye gives Curry decisive credit for the game's success:

'Helen acted as a scientific/historical advisor directly informing several of the key mechanics in the experience. It is no exaggeration to say that our winning of the competition was as a direct result of our collaboration, her work and research input.' [E10; see also E11]

The impact of Curry's work with All Seeing Eye's *Seed*, achieved through hands-on collaboration, game play and media coverage, has been to create a research-based game experience, to engage wider audiences in the history and science of plant breeding, to encourage games developers in science-based gaming and novel forms of collaboration, and to demonstrate to scientists the potential of games for communicating ideas.

Bringing reality to virtual reality. All Seeing Eye submitted a proposal for a game involving experimental plant breeding to the first round of the competition in early 2017. At this point Curry, an established expert in the history of plant breeding was engaged as a collaborator in the project at the recommendation of The Wellcome Trust. Curry shared her knowledge of the history of amateur plant breeding with All Seeing Eye, offering a more relevant starting point for developing the background narrative of *Seed* than that of contemporary laboratory-based genetic engineering, as had initially been planned. Curry also devised basic plant breeding scenarios based on real-life examples that the designers incorporated into the game.

Transforming game development. Curry's collaboration offered a new model for how a developer could generate revenue in collaboration with academics. As described in a *THE* article, 'Although Mr Kay had initially envisaged a high-tech virtual reality environment for his game, he soon realised that Dr Curry's research provided him with a much more unusual aesthetic along with many intriguing details... "We have taken that historic period and such stories to create beautiful visual vignettes," Mr Kay explained' [E11].

As a result of this, Curry's work has had impact on further revenue-generating ventures, such as All Seeing Eye's virtual reality recreation of the 'Dambusters' mission (now installed at the RAF museum in Hendon). Olie Kay explains:

'In working on *Seed* with Helen it was evident how historical and scientific consultation/collaboration could be enormously beneficial to our working practices and have a real impact on not only how a project developed, but also the end result. As such we were emboldened to collaborate with several researchers for our Dambusters who again were instrumental to the success of the project.' [E10]

5. Sources to corroborate the impact (indicative maximum of 10 references)

[E1] Newspaper article: Martin, T. Serious fun: how video games grew up - and became an art form to rival Hollywood. *Prospect*, November 12 2018. [\[Link\]](#)

[E2] Newspaper article: Reisz, M. Are video games a neglected resource for popularising research? *Times Higher Education*, January 17 2020. [\[Link\]](#)

[E3] Review: Most anticipated indie games of 2019. *Shack News*, January 9 2019. [\[Link\]](#)

[E4] Newspaper review: Astrologaster review - comedy quack stalks the streets of Shakespeare. *Guardian*, May 9 2019. [\[Link\]](#)

[E5] Newspaper reviews: Hope in the dark: culture to make you feel less terrible about the UK election. *Guardian*, December 13 2019. [\[Link\]](#)

[E6] Twitter quote: <https://twitter.com/chrisoregan/status/1137295110738198528>

[E7] Itch. Bundle for Racial Justice and Equality. [\[Link\]](#)

[E8] Testimonial from a developer at Nyamyam

[E9] Newspaper article: Barrett, D. 'Seed' Wins USD500,000 Developing Beyond Video Games Final' *Unreal Engine*, February 15 2018. [\[Link\]](#)

[E10] Testimonial from an Associate Creative Director, All Seeing Eye.

[E11] Newspaper article: Reisz, M. Computer games bring research projects to (virtual) life. *Times Higher Education*, November 5 2017. [\[Link\]](#)