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The virtual prison as a digital cultural object: Digital mediation of political opinion in simulation gaming.

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Abstract

This paper engages with the digital mediation of political opinion in simulation gaming, recent critique of cultural geography's aptitude for research into digital media, and the digital mediation of cultural and political opinion. Drawing attention to literatures within carceral geography and cybergeography, and presenting an empirical case study of the simulation computer game *Prison Architect*, it suggests that rather than being necessarily ephemeral, fleeting and transient, digital cultural production can also be carefully created, curated and manipulated in ways which involve both deep reflection on, and profound shaping of, political attitudes.

Keywords:

carceral geography; cultural geography; cybergeography, simulation games, prison conditions, punitive attitude; digital media

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> *The multi-million selling PC hit* Prison Architect *is coming to PlayStation 4 and Xbox One… players build and manage their own maximum security prison built to hold the most hardened of criminals. Cope with blazing infernos, prison-wide riots, demolition and construction, and eventually build the prison of your dreams.*
>
> Press Release, www.develop-online.net April 2016[1]

Introduction

In February 2016, David Cameron gave a speech on the controversial and highly politicised issue of prison reform; the first such speech by a British Prime Minister for twenty years. Whilst he stood at the podium, declaring himself 'passionate about building new prisons' to replace older facilities with newer ones 'more effective at rehabilitating offenders, with modern facilities and smart use of technology such as biometric key systems', the over 1.25million purchasers of simulation game *Prison Architect* were also building prisons; virtual worlds in which to house virtual inmates.

Building prisons is a political act, and decisions about what kind of prisons to build and for what purpose, reveal punitive philosophies about who prisoners 'are' and what prison is 'for' (Moran 2015), opinions which reflect and are shaped by media representations, including those hosted by digital media platforms of various kinds.

Cultural geography's relative lack of engagement with digital media has been noted by Rose (2015, 2016), in arguing that it needs to keep up with the times and engage effectively with 'the media through which political provocations are now shaped' (2016, 4). A key tenet of the argument she makes about this silence on digital media, and, by extension, implications for 'the creation of meaningful places, spaces and landscapes' (2015, 3) is that cultural geography's methodological predilection for sustained, fine-grained, close attention to 'stable cultural objects' such as landscape paintings or crafted artefacts, is now poorly adapted to scholarship of the immense volumes of mutable, multimedial, glanced-at images which she terms 'digital cultural not-objects' (ibid 9).

Whilst cognizant of the explosion of transient, ephemeral digital imagery, the development and cultural significance of which is a trigger for Rose's interventions, we here draw attention to simulation computer games as a digital formation which arguably challenges her characterizations. A form of digital cultural production mentioned by Rose (2015) almost in passing, but not engaged in any detail, we argue that simulation ('sim') computer games may constitute if not a completely 'stable' cultural object of the type read as 'texts' in the fashion of the new cultural geography of the mid-1980s, then one whose mutability is consciously crafted. Intended for close, long-term scrutiny both by a creator, and by a wider digital audience, sim gaming requires reflexive, creative engagement by gamers, and both represents, and is instrumental in the production of, cultural and political meaning.

We take as our object of study the sim game *Prison Architect* (hereafter PA), examining it in relation to a specific political issue of contemporary relevance. 'Penal populism' or 'public punitiveness' is the assumed support of electorates for prisons policies which

seek retributive responses to offending behaviour and have engendered the expansion of the penal estate across the Anglophone world. Based on (digitally mediated) empirical research which sought to better understand the ways in which experience of PA gameplay influenced punitive opinion, and vice versa, we draw further on the work of Rose (2015) to explore the utility of her suggestions that cultural geography of digital media consider notions of 'interface', 'network' and 'friction'. At the same time, we bring the new human geographical subdisciplines of carceral and cyber-geographies into direct dialogue with one another.

Cultural geography, simulation gaming and the 'digital cultural not-object'

In a recent paper and shorter intervention (2015, 2016), Gillian Rose has argued that cultural geography has neglected the conceptual and methodological implications of the expansion and penetration of digital media, in terms of the digital mediation of cultural production, circulation and interpretation. Her argument is that in order to regain traction in this field, cultural geography needs to move away from 'the attentive gaze on stable cultural objects' (2015, 1) that characterized the 'new cultural geography', to instead focus on 'mapping the dynamics of the production, circulation and modification of meaning at digital interfaces and across frictional networks' (ibid).

Rose (2015, 2016) observes that cultural activity of most kinds is being transformed by digital technologies. The multimedial nature and mutability of images, (often themselves computer-generated or modified such that they do not transparently represent any 'real' object or landscape), reproduced on countless websites, screens, billboards, etc., means that there is often no 'original' object to be found. And the sheer quantity of images now created and circulated by the millions of people able to capture,

edit, share and engage with images via handheld and other devices, presents a twofold challenge to cultural geography. Firstly, the difficulty in identifying a 'stable cultural object' for analysis, and secondly, the issue of dealing with 'the massiveness of digital cultural production' (2015, 6).

In a move towards enabling cultural geography to grasp the specific characteristics of digital cultural activity, Rose suggests three conceptual terms; interface, network and friction (2015, 7). The first, *interface,* she defines as a threefold agency of hardware, software and humans, which together create on a screen (itself also an interface) a temporary entity (formerly known as a cultural object), such as an image viewed on a smartphone via Facebook. It is this interface, she argues, that should now replace the notion of a stable cultural object. The second is the *network* that digital interfaces open onto; 'the extensive and complex material infrastructure that stretches and locates digital cultural activity in physical space: cables, servers, drives, processors, exchanges, screens, keyboards' (ibid, 9), as well as the human actors whose practice constitutes the network – developers, programmers, users and so on. Finally, *friction*, for Rose, is the uneven operation of interfaces; computer crashes, version-control, outages, viruses, water damage, glitches.

Whilst broadly in agreement with these arguments, and appreciative of the suggestion of these terms (which we explore in the sections to follow), we argue here that whilst the descriptions fit very well to the millions of transient, fleeting images uploaded every day, (with which Rose is most concerned in this recent work), they are not all-encompassing. In her discussion of evanescent digital imagery, Rose drew attention to fleeting images posted without 'much deliberative thought' (2016, 3) on platforms such

as Facebook, Twitter, Instagram and Snapchat; created largely to be posted, 'liked', and scrolled past, rather than to be studied and appreciated. Whilst such images certainly do proliferate, their properties, we would argue, are not characteristic of all imagery enabled by digital media. The website Pinterest.com, for example, is described as a 'social curation' site (Hall and Zarro 2012, Vili et al 2012), combining social media features, (such as sharing, liking, commenting and following), with collecting capabilities like creation and curation. Creating public 'boards' of images collected ('pinned' and 'liked') according to some personal thematic (such as a planned wedding, or home renovation project), users select, categorize and share digital objects in ways which necessitate, reflect and invite studied attention and consideration.

If the imagery pinned to pinterest boards is an example of careful 'curation' of digital media, then simulation games which involve the creation of virtual spatial structures, could be another. Although gaming is mentioned briefly in Rose's work, (for example in a concession that established cultural geography methods of close readings may not be completely obsolete in the case of 'particular moments in specific games' (Rose 2015, 11 citing Ash 2015)), the growing geographical literature on simulation games in particular does not fall within its remit.

This is unfortunate, since although literatures within cybergeographies largely concur with and underpin Rose's arguments, within discussions of gaming in particular, there is some divergence. Cybergeography has paid close attention to the relationship between the 'real' and the 'vicarious' or 'virtual', overturning the notional separation of the two (Graham, 2013, Kitchin and Dodge, 2011). 'Cyberspace' as a separate, immaterial world has been superseded by overlapping and interconnected views of virtual and material

space (Kinsley 2013). Real/virtual and on/offline dichotomies are weakening and virtual worlds are no longer considered abstract and disembodied spaces (Crang et al., 2007; Kitchin and Dodge 2011; Wilson 2011). Seen initially as liberating people from real-world constraints and inequalities, the internet is now understood to reinforce existing social norms and reproduce discrimination and division (Rey, 2012).

Much of the work of interrogating the digital generation of meaning suggested for cultural geography has, as Rose (2015) noted, been underway for some time within cybergeographies, new media studies and game studies (e.g. Galloway 2006, Hookway 2014). Recent literature on virtuality presages some of her arguments about the significance of digital media in shaping political provocation (Rose 2016), and has considered the ways in which this shaping might happen. The internet is understood not merely as a transmitter of meaning, but as intimately involved in its production (Leszczynski 2014, Craine 2007). The 'virtual' and the 'material' are part of the same augmented reality (Rey, 2012), with the material world 'virtualized through the embedding of virtual architecture into its fabric' (Dodge and Kitchin 2007, 534). As complex technology enables different forms of interaction, it becomes increasingly evident that the internet is part of our social reality in myriad ways (Kinsley 2013, Rey 2012).

Ash (2009, 2010a&b, 2013) and Ash and Gallacher (2011) have written in depth on videogaming, focusing in particular on 'shooting' games, a subset of 'life simulation' games, where players encounter and manipulate pre-designed worlds, sometimes via an avatar. They posit such games as experimental and ecological spaces which facilitate changes to gamers' interaction with the world *beyond* the game, both in terms of their

own spatial awareness, and in relation to games' political status. As Ash and Gallacher (2011) noted, describing a game endorsed by the US military in which the pre-defined world acted to engender support for military activity, games are never politically neutral. Their influential and groundbreaking work within life simulation games perhaps also has purchase within construction and management simulation games, in which gamers create their *own* worlds rather than exploring pre-defined environments.

Although the entwining and imbrication of virtual and material worlds extends to geographies of gaming (Shaw, 2011), consideration of such simulation gaming seems to us to challenge Rose's (2015) claim that stable digital cultural objects are now difficult to identify. Although she argues that the interface has replaced the stable cultural object, the kinds of spaces created, designed, sustained and explored during construction and management simulation gameplay, by players occupying a transitional arena between the self and the world, seem to us to share some of the characteristics of the stable cultural object. Whilst reflecting the interconnectedness of virtual and material, the spaces that construction and management sim gamers create and manipulate, in which they establish identities and meanings through experiential learning as an arena for cultural expression (Mendler de Suarez et al., 2012), seem to be something more than merely a 'transitory pulsing of electrons, temporarily conveyed' on a screen (Rose 2015, 8). Whilst they do not exist in any form independent of the interface, and whilst gamers are not fooled into thinking that they are 'real' (although see literatures on Second Life), the type of engagement they require from their users seems to us to place them in a different category to the fleeting imagery with which Rose is predominantly concerned.

In terms of Rose's concern for the potential for political provocation inherent in digital cultural production, construction and management simulation games fit the bill. These games are not isolated environments; they enable experimentation in a 'delineated and intensified space and time' (Lammes 2008, 261), which can foster better understandings of the 'spatial confusions' present in the 'real-world' (ibid 264). Conceptualizing game-space as a container of ideas, Schwartz (2006) argued for the interrelationship between fantasy and realism. A 'geography of imagination' enables gamers to engage in activities in which they cannot participate in 'real' life, where they control and manipulate representations of reality. Shaw and Sharp (2013, 2) describe this as 'a form of storytelling through which questions over the future of humanity and its existential place in the world are told through imaginary landscapes and alien tropes that refract and reshape the real'.

These practices of imagination, manipulation, fantasy, control, and storytelling, whilst at odds with transient, throwaway engagement with digital objects, enable simulation games to operate as a medium for dialogue about society, with laws governing game behaviour fostering interpretation and experimentation (Frasca 2001). Simulation games may be positioned by their creators and gamers as constituting multiplicitous sites of production of political and cultural meaning; meaning that is generated and conveyed not through spontaneous tweets, but through individual, reflexive and creative crafting, (including time spent appreciating others' fashioning) of cultural digital objects. Whilst gamers also have smartphones, and post to Facebook, perhaps consciously or subconsciously drawing upon their experience of 'digital cultural not-objects' in gameplay, to characterize such digitally mediated stable cultural objects as a 'rare exception' (Rose 2015, 3) would seem an oversimplification.

Simulation games require intimate understanding of outcomes of decisions (Schulzke, 2014; Mendler de Suarez et al., 2012), and a game's narrative 'can draw players into the underlying logic that governs the dystopic world' (Schulzke 2014, 327). As active producers, simulation gamers create landscapes onto which ideologies and social interaction are projected; creating not an alternate world, but a reproduction of norms, attitudes and behaviours (Shaw 2011). Recognising their critical power (Malaby, 2007), we here advance a body of literature that sees games as useful instruments to model reality, critique existing institutions, and explore utopian and dystopian alternatives (Shaw and Sharp 2013, Schulzke 2014, Frasca, 2001). In other words, we argue that construction and management sim games enable the creation of digital cultural objects whose deliberative curation reflects and shapes political attitude.

Carceral geography and punitive attitude

We approached our study with an interest in the political views held by gamers, and the potential for these views to shape, and be shaped by, gameplay. Our focus was the timely issue of imprisonment and specifically, punitive attitude in relation to the nature of carceral environments – i.e. what *kinds* of prisons should house offenders. Carceral geography, the geographical engagement with spaces and practices of imprisonment (Moran 2013, 2015), has considered 'real' carceral environments in some depth, but has yet to meaningfully engage with cyberspace to consider the vicarious experience of incarceration. Whilst a recurrent research theme has been the distinction (or lack thereof) between what lies inside and what is beyond the prison (e.g. Baer and Ravneberg 2008, Moran 2013a&b, Allspach 2010), carceral geography has tended to study individuals or institutions with *direct* experience of confinement. Very little work

thus far has considered indirect, or vicarious, engagement with incarceration. Although geographers have begun to study media representations which open the 'spectacle' of punishment to public view (e.g. Turner 2013 on docu-dramas), they have not yet explored the potential of cyberspace to offer a means to understand, amongst other things, the shaping of political *attitudes* held by members of the general public *without* personal experience of imprisonment.

This is not merely an academic exercise. Prisons policy is highly topical both in the UK and elsewhere: with his 2016 speech, David Cameron committed his government to reform of the prison system, and construction of new prisons focussing on rehabilitation. Whilst this was a landmark speech, he stopped short of suggesting that prison conditions might resemble living standards on the outside; there is a pervasive sense in which 'comfortable' prisons are viewed as 'unacceptable' by the British public. In the region of penal 'excess', prison design must satisfy 'penal populism'; the apparent demand from the public that prisoners be punished through prison conditions. However, highly incarcerative countries like the US and UK contrast with the Nordic region, where prison conditions are explicitly intended to correspond to those outside, thus promoting prisoners' participation in society. Essentially, contrasting punitive attitudes (i.e. about what prison is 'for' and what prisons should be 'like') are manifest in different types of prisons (Jewkes and Moran 2014).

Whilst in our study we were concerned with the reflexive and creative agency of gamers in relation to digital prison design, we recognise that *Prison Architect* is just one of a legion of media portals through which the prison can be virtually accessed. Although Foucault's (1979) now-familiar contention is that the prison replaced the public

spectacle of punishment, an equally familiar argument is that the 'spectacle' of punishment returns in new guises, through media representations of incarceration that open the 'closed' world of the prison, albeit in selective and incomplete ways, through documentaries, docu-dramas, movies, novels, and so on (e.g. Turner 2013, Mason 2013, Kearon 2012).

We are interested to know how vicarious media of prisons, via sim gameplay, both reflects and produces cultural and political meaning. With criminal justice policy now a political tool (Cheliotis 2010), informed by a political imperative to respond to public opinion, the prison system is as 'a project of state-building' (Gilmore 2002, 16), with media representations of imprisonment assuming vital significance.

Methodology

Our research targeted players of Introversion Software's *Prison Architect* (PA), a construction and management simulation game involving the design, construction and operation of virtual prisons, guided by rules and incentives ('game mechanics'). A comprehensive description of PA is beyond the scope of this paper (see Downing and Levan 2015 for more detail), but essentially gamers design and operate a financially solvent prison, with credit derived from one-off new prisoner committal fees (US$300-$1000 depending on security classification); and US$150 per prisoner/day thereafter. Various scenarios deliver bonuses (e.g. early releases for good behaviour) or fines (e.g. escapes). Although beginners' designs grow incrementally (adding new buildings as funds allow), advanced players sell profitable prisons, building bigger facilities to pre-planned designs. The game is constantly updated, with 'bugs' fixed and game mechanics altered.

Like many construction and management sim games, the nature and complexity of PA is only revealed through extended real-time gameplay, stretching over weeks or months and involving trial and error, revision of designs, learning or devising techniques, and response to game mechanics whilst balancing economic, ethical and aesthetic priorities. Methodologically expedient, our study of *existing* gamers negated any need for participants to *initiate* time-consuming gameplay purely for research purposes. Research was designed specifically to probe gamers' punitive attitude, through a survey generating descriptive statistics, and recruiting follow-up interviewees.

A link to an anonymous online survey was posted in PA fora on gaming and networking websites. The survey, 'live' for 4 weeks in early 2015, asked for demographic data, as well as about gaming experience and punitive attitude. Willing follow-up interviewees left email addresses. Completion was unrestricted, and there was no way to verify the factual information shared by the 605 respondents. Survey completion was limited only by English-language ability; it was short, and its language uncomplicated. Introversion Software were approached for interview but declined to respond; information about game development and mechanics came from online discussion fora in which designers participated.

Given our focus on *vicarious* experience, we excluded eighty respondents who declared that they had been inside a prison, as prisoner, visitor, employee, or in any other capacity. Seven interviewees were then recruited and asked to email 'screenshots' of their prison designs as visual aids for in-depth semi-structured interviews, conducted in

English via Skype, and recorded, transcribed and coded for analysis. Three of these screen shots are reproduced here (Figures 1-3).

Of the resulting survey dataset (n=525), 93% of respondents identified as male, and 98% were under 40. This marked gender/age skew is in line with studies noting that gamers are more likely to be younger males (e.g. Kaiser Family Foundation 2005). Of those giving a country of residence (n=498), 69% lived in Anglophone countries (including UK, US and Canada). 76% were in countries with high incarceration rates; (defined here as above 100 per 100,000), and 36% in the US, with its world-leading incarceration rate of 716 per 100,000 – 'mass incarceration' – far outstripping the much lower incarceration rates in Scandinavia. The seven interviewees were selected to broadly represent the overall survey population: five were from the UK and US, one from Germany and one from Poland. Six were male, and one was over 40 years old.

Digital mediation of cultural and political values

In order to consider the ways in which political opinion may be digitally mediated through PA, we first used the survey to establish the punitive opinions held by our respondents. Responses relate to 38 country contexts, although the majority of respondents were in the more 'repressive' penal regimes of USA and UK. The data generated, shown in Table 1, and taking as comparators the USA, UK and the Nordic region, (Denmark, Sweden, Finland and Norway) and the punitive attitudes expressed merit brief discussion.

Gamers were in favour of prisons functioning mainly or entirely for rehabilitation. Support for a purely punitive purpose was lower than support for a purely

rehabilitative purpose. The higher their local rate of incarceration, the more likely they were to say prison was used 'too much'. Gamers thought prison conditions should equate to those available to low-earners outside. There was more support for prisoners' access to daylight and fresh air, outdoor recreation space and fitness/gymnasium equipment, than for access to TV in cells, or to the internet. Only a minority supported greater use of incarceration, or argued for harsher prison conditions. Although there was no 'control' group of non-gamers, in line with other studies (e.g. Adriaenssen and Aertsen 2014, Pratt and Clark 2005, Wozniak, 2014), there was no evidence of a clamour for harsher prison conditions. Views expressed at interview were, of course, much more complex than survey results suggested.

Interface, Network and Friction

Although we noted above the differences between sim games and more ephemeral digital imagery, in the sections which follow, we experiment with Rose's (2015) conceptual tools of interface, network and friction to consider the ways in which PA reflects and shapes political opinion.

Interface

In the context of the new digital cultural production, *interface* is for Rose (2015) the replacement for the stable cultural object, which she argues is now vanishingly difficult to identify due to its multimediality, mutability and incalculability. Whilst this may be the case for online distribution platforms such as Snapchat, for construction and management sim games, there seems to us still to *be* a cultural object, at least in the minds of gamers, in the form of the original virtual 'world' they create, *via* the hardware/software/human interface. Although the object is not completely stable, it is

the modifications and redesigns that enable gamers' engagement with the object of their own creation. Gamers spoke at interview about their designs in ways that emphasised their uniqueness, exhibited deep understanding of game mechanics, reflected individual curation, and, resonating with discussions in geographies of gaming, collapsed the distinction between on and offline worlds.

Although this virtual sim world perhaps constitutes a digital cultural object *beyond* the interface, there is still value in considering Rose's conceptualization*,* particularly in terms of software functionality. In other words, PA is designed to enable very different virtual prisons to be created, and it was this propensity for variation and experimentation that was the realm of the 'complex work, both reflexive and intuitive' (Rose 2016, 4), that gamers did to create cultural meaning. Our interviewees designed outward-facing prisons with low-density cells, open spaces, productive and communal areas (e.g. Figs 1 and 2, for which we hereafter use terms given by their designers; 'outdoor' and 'open-plan' respectively); but also facilities with high-density cells, no windows or natural light, and few green spaces (e.g. Fig 3, nicknamed 'indoor'). The designers of these three had adopted the 3x2metre minimum cell size (then) mandated by the game, with only one (Fig 3) adding a TV and bookshelf to the obligatory bed and toilet. This provision was intended to keep prisoners calm whilst in lock-down for several hours each day, and also enabled the punitive withdrawal of these privileges. Talking us through the screenshot of his design, the gamer told us

> *...the prisoners in their free time they can use each of these items... to relieve*
>
> *their stress or their needs... They can sleep, they can watch TV, or just listen to*
>
> *the sound of whatever is on the TV or they can read a book... if you want to*

punish them more then, then bring them to the solitary or… then you can also

dismantle the objects from their cells.

Describing the importance of natural daylight and access to outside spaces, another

gamer pointed out the large expanses of green space surrounding a lake (Fig 1):

…I think it is just incredibly dehumanizing to keep people indoors all the time…

…you'll notice that all my designs are outdoor focused as well… people walk

around in daylight to get from place to place and I don't do the kind of giant

indoor prison.

One of the most intriguing aspects of the interface was game mechanics, the system of

rules and incentives that operated within the software of the game, and within which

gamers have to operate. Game mechanics direct player actions and are suffused with

developers' assumptions (Adams 2002), and understanding how players interact with

them is a key component of a ludological perspective on gaming (Ash and Gallacher

2011). In PA, gamers played to the credits offered by game mechanics, many of which

incentivised rehabilitative goals:

[Prisoners] get rehabilitated and have a lower chance of reoffending and that

means… that I get more money… because I get $3000 for each prisoner that gets

released early…

…you get bonuses for letting people out on parole, …for having people pass the

education classes and certainly [for] having people working in the workshops…

Although game mechanics thus incentivised virtual prisoners' rehabilitation, at the time

of the research, none of the credit-bearing design characteristics pertained to prison

environment. Although education programmes, work, and spiritual support were

rewarded, size of cell, availability of natural light, or views of green space were not.[2]

Despite this, interviewees still included these un-incentivised elements. One discussed their open-plan prison (Fig 2) with outdoor and human-scale communal areas.

> *I tend to [include] a lot of green areas, so putting grass in the game and things like that… it's not too large that you just feel like sort of, one person out of hundreds….*

The designer of the 'outdoor' prison (Fig 1) stressed that his rehabilitative approach was not driven by game mechanics:

> *I guess you could say I go pretty light on the guys [laughs], or more rehab-focused than just trying to keep a bunch of people locked up… There are certainly things that are strictly my own opinion like having outdoor space and recreational things to do. …But mechanics… doesn't increase happiness at all. Being around a big lake, it's more for my own gratification.*

Without incentive from game mechanics, these interviewees exhibited concern for prisoners' emotional wellbeing, assuming a direct link between these design features and inmate behaviour and the likelihood of returning to society as productive and law-abiding citizens.

Although gamers described mechanics as somewhat limiting, they are not the only means by which designs are restricted. The boundaries of players' own imaginations and technical ability also imposed limits, which some sought to overcome by engagement in online game fora (the same fora, incidentally, through which they were recruited for our study). With this in mind, we move next to consider *network,* which for

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[2] Very recently, the minimum cell size requirement was removed, meaning that cells no longer have to comply with minimum dimensions of 3x2metres, although they must still contain a bed and a toilet. Cells are quality-graded on the basis of size, outside-facing windows, desk and chair, TV and radio, bookshelf and shower. Prisoners in above-average cells are engineered to be less likely to misbehave within the game, because they want to keep their 'perks'.

Rose (2015) is the system of data, cables, servers and so on, and also people, onto which the interface opens.

Network

In the light of our study, we focus here on the network of people involved in PA gameplay; gamers and game designers, and the means by which they communicate with one another. Many gamers took inspiration from online gaming fora where design screenshots, (visual representations of 'live' prison designs), are shared. Operating much like subject-specific social media chat-boards, these fora enabled the close study, comparison, evaluation and sometime envy of other gamers' designs. Architectural imagination and gaming prowess in sustaining large facilities were particularly admired:

> *Boy the bigger prisons especially, there are some really fascinating ways that people have put things together.*
>
> *...other people who are slightly more sort of, architecturally minded than I am have come up with some really good designs.*

Gamers remarked on designs which seemed more 'luxurious' than their own. Highly punitive designs were not aspirational.

> *I've seen other people online who make really big cells, that every cell has a shower, they are kind of going for a hotel vibe.*
>
> *...I saw one that was basically just chalets and it was huge cells shared between two and three people, and big green luxurious grounds with lots of trees and I thought to myself that's amazing, I'd love to be able to make something like that.*

The sharing of ideas online is a means of producing and disseminating meaning in virtual space (Leszczynski 2014; Craine 2007). Such networks were also a vehicle for the consideration of others gamers' motivations, and of reflection on the ethical position evident in some of the designs. Gamers shared intelligence about strategies and design, consolidating and challenging opinions, and cultivating understandings of carceral systems. It is, however, clear that 'tips' picked up in game fora are adopted or ignored based on consideration of profitability versus ethical concerns. For example, one interviewee reported that although he looked at other designs, and watched Introversion's video updates, he rejected tips that contradicted his ethical stance:

...I try to play as if this was kind of a real thing, whereas ...there are certainly some that are gaming the simulation, you know, like the five-hundred-prisoner-holding-cell-type (laughs) but [in] each of my designs I try to provide very humane conditions.

but adopted updates which supported his philosophy

They have also introduced a lot of rehabilitation-focused things like the parole room, the chapel..., the library. ....as those things have come out I've added them into my prisons.

Friction

The last of Rose's (2015) conceptual tools is *friction,* the not-smooth operation of interfaces, such as computer crashes, glitches, bugs, short battery life and so on. Although countless 'bugs' are discussed on game fora, in our study, our interviewees spoke very little about such issues. They did, however, hone in on the ir/realism of the game, in part manifest through the operation of game mechanics, as a source both of

frustration and of reflection on the purpose of the game, and more broadly, of imprisonment itself.

Thomas (2006) argued that gamers' agency in constructing spaces enables the development of ideas of morality, justice and welfare, under the guise of entertainment, making realistic game consequences key to experimentation. De Castell and Jenson (2003, 651) recognised the potential within 'serious' game play for educational gaming culture: '…games are not just played… (they) become models for everyday life and for the formation of subjectivity'. Game mechanics and the extent to which the simulation is convincing and 'realistic' within its context, is significant in enabling such development.

Simulation games operate as dynamic systems, requiring understanding of decision-making outcomes. Interviewees talked about the compromises necessary to succeed in PA:

> you can… make as much money as possible and not care much about your prisoners, but you can also run a prison that is successful in reforming and does not make profit… there are many different ways to succeed in the game… success in the game is very subjective.

However, more punitive measures are also incentivised, with interviewees reporting delivering harsher punishments than they deemed strictly necessary, due to 'unrealistic' game logic, rules and prisoner behaviour. They described acting against their better judgement as a product of simplistic and unrealistic aspects of the game;

> …punishing prisoners for contraband as a deterrent, ideally I wouldn't want to do that… often for mobile phones or cigarettes… the game is telling me that I

am putting them in solitary or lock-down… because the game is obviously

programmed, you can't sort of use human interaction to work out that problem.

I upped the punishments on purpose …to recruit more confidential informants

because you can only recruit them when they are in solitary… [laughs] which is

really like a terrible thing to do but because it's the game and what the game

mechanics encourage.

Interviewees described the need to prioritise expenditure within the incentive structure, and noted that in some cases this forced trade-offs between moral judgments and fiscal stability.

…in order to continue playing the prison you have to be making more money…I

spend less money than I would like to on programs and rehabilitation stuff, and

I also spend less money on food… because it's not financially feasible.

The friction, for these gamers, was evident in their acute awareness of game mechanics' steering of their activity, and the clear distinction they drew between their actions in response to these incentives, and actions consistent with their own punitive philosophy, where these were contradictory. Arguably 'unrealistic' scenarios[3] contributed to a feeling that PA was a poor representation of 'reality', and led some players to separate efficient gameplay from punitive attitude.

I don't see a huge connection between the game and real life prisons… a lot of

things that work in Prison Architect *would never work in real life… I am trying*

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[3] (as well as the absence of racial discrimination issues, gang affiliations and sexual violence, which some interviewees noted existed in 'real' jails, but not in the game)

to play what works in the game, trying to play the game efficiently and not

really trying to project something from the real world into the game.

Interviewees believed the game had become increasingly realistic through regular updates, and the more realistic they perceived it to be, the more likely they were to translate their own views into their designs, supporting Frasca (2001) and Thomas' (2006) assertion that as a game provides more realistic consequences, game mechanics influence player decision-making less, and gamers challenge dominant ideologies (Leonard 2003). Although less than half of survey respondents believed that they translated their personal views on 'real-world' punishment into their game designs, in the smaller interview sample, (including individuals who in the survey had stated that on and offline opinions were separate), it became clear that as the realism of the game developed, decision-making increasingly translated punitive attitude into virtual prison design.

Game mechanics may seem technical, detached and impersonal, but they are of course created by humans, and reflect the intentionality of game designers who, as in this case, may be fully aware of the ethical dilemmas inherent in gameplay. Although game designers at Introversion declined to participate in our study, it is clear from their public statements that the game's moral quandaries are intentional. Creative director Chris Delay has said that 'It would be very easy to think of [PA] as building a hotel or something' but that 'right from the very start, we knew we had to let the player know that this was a different experience, he has to think differently about it'.[4] And whilst arguing that 'we're not aiming to make the player deeply uncomfortable' he stated that

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[4] Interview detailed at http://motherboard.vice.com/read/we-asked-an-architect-about-the-game-prison-architect
accessed 17.6.2016

'we're certainly not going to make a game about prisons without dealing with a lot of the issues that occur in prisons'.[5] For example, they discussed strategically manipulating sound and imagery when introducing a capital punishment option. The virtual execution process was intended to produce affective and emotional responses, heightening feelings of culpability to force gamers to make considered decisions. [6]

> *All the sounds of the prison are gone at this point and all we can hear now is some very sinister audio because... there's very much an intention here that the player has to focus on the execution. You're doing this, you're responsible...*

These manipulations had the desired effect on one interviewee: *"I got quite upset when I did it because I felt really bad for him... because of the way it's presented, it's very chilling"*. The affective qualities of gaming, (Shaw and Sharp 2013, Ash 2010b) within PA produced player immersion and an embodiment of moral decision-making in virtual space. Feelings of guilt and unease led this interviewee to question his own decision-making, in what Bogost described as learning through 'corporeal, cognitive and evaluative processes' (2004, 1).

Digital mediation of political provocation

One of Gillian Rose's stated purposes in her recent interventions (2015, 2016) was to argue for the potential for cultural geography to interrogate the human thoughts, feelings, processes and practices which are mediated by digital technology, and the ways in which these digital mediations shape political provocations, and she suggested the conceptual tools of interface, network and friction as possibly helpful in this endeavour. Having considered the gaming experience of PA in terms of these three

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[5] Interview referenced at http://www.independent.co.uk/life-style/gadgets-and-tech/gaming/prison-architect-a-clever-way-of-exploring-how-the-penal-system-is-run-or-an-ethical-offence-10144771.html accessed 17.6.2016

[6] IV Software (2015) Prison Architect Alpha 31, https://www.youtube.com/watch?v=S7im85MDoxA, 27th March 2015, accessed 2nd April 2015.

tools, we now reflect on the ways in which this construction and management sim game digitally mediates political opinion.

It is clear from the discussion above that gamers' 'offline' opinions about imprisonment influenced their 'online' designs. It is equally clear that interviewees' opinions on incarceration *evolved* through experimental and reflexive gameplay. For example;

I used to think that it's all about taking away dangerous people and putting them in a box somewhere so they can't hurt people but I think now it's along the lines of trying to figure out why they are doing this and trying to help them... and rehabilitate them, because... I mean ultimately it might be more expensive in the short term but in the long term I think you might benefit more from it.

Interviewees reconsidered their opinions about 'real-world' incarceration.

...even small, small steps, small thinking about logic, how it works in prison, how the regime has influence on the prisoners, how they spend their time, what they do... do you need to provide a lot of security to your prison, but your prisoners will be feeling that they are being watched ... or do you want to make them feel a little less suppressed but the overall security of the prison won't be as high?... It's an interesting idea to find the middle ground, to provide them with security from themselves and to provide security for the prison itself.

By making financial sustainability necessary for success, game mechanics required gamers to temper their moral ideals for incarceration with pragmatic considerations, perhaps affording them a better understanding of the imperatives for prison management than might otherwise have been the case.

I can understand why certain decisions are made a lot better... you actually have to manage it and you have to prevent them from rioting and... make sure

they have enough food and make sure there's enough cooks and make sure

there's enough guards, make sure there's enough space.... I understand why we

do a lot of things so, that kind of transcends [sic] *into understanding how we*

treat our prisoners...

Despite financial solvency being the bottom-line in game mechanics, the notion of a 'successful prison' was considered highly subjective, with many discussing the challenges of balancing economic and moral goals. Interviewees frequently reflected that real-world prison design and management was more complex than they had previously thought.

...money is an important factor in the game and it is an important factor for

many real-life prisons and I think the idea of profit prisons is pretty

controversial, should prisons be able to make profit?

Interviewees specifically reflected on the morality of prison privatisation, a contentious issue in many contexts (including US, UK, and Canada). Driven by a deeper understanding of virtual carceral systems, players began to question their own assumptions, supporting a weakening of online/offline, real/virtual dichotomies, a move away from seeing virtual spaces as abstract and disembodied (Crang et al., 2007, Kitchin and Dodge, 2011, Wilson, 2011), and the digital production of meaning. This reflexive thinking indicates that 'the "possibility space" of the game exceeds the game itself' (Bogost 2004, 1). Interviewees confirmed that gameplay had been an informative experience;

I never really gave much consideration about prison... you get to see the lives of

the prisoners in the game... you've got a regime and its 'you do this at this time'

and 'you do that at that time' ... it made me think about the nature of prison

and maybe it's given me... a better understanding of what it is to be a prisoner.

Thomas (2006) argues that player agency allows gamers to experiment with good and evil, success and failure, and our study bears this out. The logistical, financial and moral challenges within PA allow players to 'inhabit' the virtual prison system, creating new meaning and opinions through experiential learning (Mendler de Suarez et al., 2012). The survey respondents who reported that gameplay had influenced their opinions on imprisonment supported these findings, they were more aware of the complexity of designing prisons; the game had made them think about the conditions in which prisoners are held, and it had made them reconsider the fundamental purpose of imprisonment.

Conclusion

Rose (2015, 2016) challenged cultural geography to keep up with the times and engage effectively with digital media through which cultural and political meanings are produced as well as represented. She suggested that it was ill-suited to cope with the new lack of 'stable cultural objects', and put forward three conceptual tools, interface, network and friction, intended to assist in reorienting cultural geography to this specific cultural moment. Drawing on our study of the digital mediation of political opinion for construction and management simulation gamers, whilst broadly in agreement, we argue that the stable cultural object, in the form of single, crafted, created, curated, cultural artefacts, may still exist in some digital media, for example the virtual worlds created within these simulation games.

That said, we find Rose's conceptual tools useful in interpreting gameplay as described to us by interviewees, and in uncovering the ways in which gameplay produced

meaning. Interface describes well the hardware/software/human interaction, with gamers grappling with game mechanics in operating their virtual prisons. Network helps understand the wider fora into which the interface opens out, with gamers using chatboards to compare designs, and these same portals providing our own access to them in methodological terms. Friction was the most valuable conceptual tool, but in ways perhaps not entirely anticipated in Rose's (2015) explication. It offered a means to understand the ways in which ir/realism, a key issue in scholarship of gaming, acted through game mechanics to spark tension within the interface, and specifically to make explicit the often implicit reflections on ethical issues raised in designing for imprisonment. Gaining detailed understanding of game mechanics, and distinguishing minutely between realism and irrealism, gamers balanced financial, moral and pragmatic considerations in gameplay, manipulating virtual gamespace to project and contest ideologies and critique the existing institution of the prison. As Shaw and Sharp (2013), Schulzke (2014) and Frasca (2001) suggested, this game wielded critical power to model reality and shape opinion, conflating the 'real' and the 'virtual'.

This study contributes to a small but growing body of geographical literature recognising games as powerful tools to understand the complexities of reality (Shaw and Sharp 2013; Schulzke 2014). Findings promote the greater use of simulation games in particular; their dynamic nature allows gamers to gain insight into the cause-effect relationships of their decisions. Strengthening Bogost's (2004) claims, PA's 'possibility space' exceeds the screen, with players questioning their own assumptions, and developing their views on incarceration through learning, emotion and interaction. We support Mendler de Suarez et al.'s (2012) view that further research could help widen games' application as tools to model new possibilities and visions for the long-range

future within policy-making, possibly considering the nuanced differences between construction and management simulation games, and life simulation games which have been more widely researched (e.g. Ash 2010a&b, 2013).

The policy context is key. Research into punitive attitude finds that much is ill-informed, respondents having had no direct experience; but also that opinion is often less 'punitive' than political campaigning would have us believe. Our study nuances research into prison design and conditions, an arena in which 'penal populism' has been used to challenge 'unpalatable' provisions for prisoners; in high incarceration contexts limited support is perceived for 'therapeutic' rather than punitive prison environments. Views of nature and comfortable accommodation are rarely considered worthy of their extra cost, in terms of potential long-term benefits in reducing reoffending. However, in designing prisons along quasi-realistic profit-making lines, (albeit framed by game mechanics that actively encourage ethical reflection) gamers incorporated therapeutic elements unrewarded within the game, both because they felt that this was the 'right' thing to do, and because they believed it should have wider benefits. This awareness of, and concern for, the long term societal costs of incarceration, balanced against capital build- and running-costs, suggests two conclusions. Firstly, assumptions of penal populism underestimate public insight and understanding; and secondly, the public may accept as 'intuitive' the benefits of 'therapeutic' prison conditions considered 'high-risk' by policymakers insisting that payback be categorically proven. In other words, by considering the digital mediation of political opinion, we find that there may be much less resistance to 'humane' prisons which cost more to build and operate, but promise to deliver better long term outcomes, than politicians would have us believe.

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Table 1: Punitive Attitude

	USA	UK	Nordic	All
Prison should be...				
...just for punishment	7%	6%	0%	6%
...for both punishment and rehabilitation, but mostly for punishment	21%	34%	27%	28%
...for both punishment and rehabilitation, but mostly for rehabilitation	58%	55%	42%	54%
...just for rehabilitation	10%	3%	27%	9%
Don't know/no opinion	4%	2%	4%	3%
Total N=	100% N=177	100% N=99	100% N=26	100% N=524
As a response to offending behaviour, prison is...				
...used too much	66%	36%	16%	40%
...used about enough	17%	28%	50%	30%
...not used enough	3%	20%	19%	14%
Don't know/no opinion	14%	16%	15%	16%
Total N=	100% N=176	100% N=99	100% N=26	100% N=524
Compared to living conditions available to low-earners outside, prison conditions should be...				
...better	12%	7%	12%	10
...about the same	61%	54%	54%	58%
...worse	27%	39%	35%	32%
Total N=	100% N=176	100% N=98	100% N=26	100% N=523

Figure 1 Virtual Prison Design – small cell blocks surrounding a lake

(intended for black and white printing)

Figure 2 Virtual Prison Design – campus style with communal areas and green spaces

(intended for black and white printing)

Figure 3 Virtual Prison Design – large indoor prison

(intended for black and white printing)