CONVERGENCE

Situating the videogame maker's agency through craft

Brendan Keogh

Digital Media Research Centre, School of Communication, Queensland University of Technology, Brisbane, QLD, Australia

Abstract

It is now widely accepted that videogames are a cultural form, and that they generate cultural meaning through the possibilities and constraints through which they shape players' experiences and choices. However, the cultural processes through which videogames are themselves produced remain understudied and too-straightforwardly imagined. The videogame maker does not simply conceive of a videogame idea and then execute it. Instead, the videogame is produced through processes of negotiation and iteration between videogame maker, software and hardware environments and the broader expectations of the field. In this sense, videogame production can be fruitfully understood through the lens of craft. I argue that in order to politicise agency in digital play, as is this special issue's goal, videogame research must also consider the agency of the videogame maker, and the iterative, embodied, and social processes through which videogames are produced. This article draws from interviews with videogame makers and existing research on craft production to provide a preliminary consideration of how the agency of the videogame maker as a cultural producer can be accounted for.

Introduction

The Gamebryo engine, powering Bethesda's open-world role-playing videogame *Fallout 3*, was not capable of representing objects moving through the world other than humans and creatures. When a later extension of the game required subway trains that the player would observe pulling up to and then departing a station, the developers considered a novel solution: a human character was given a life-sized train-hat, placed under the game's world and commanded to run very fast back and forward so that, to the player, it looked as though the train was moving as normal (Grayson, 2015).

Corresponding author:
Brendan Keogh, Digital Media Research Centre and School of Communication, Queensland University of Technology, Creative Industries Precinct, Kelvin Grove, Brisbane, QLD 4001, Australia.
Email: brendan.keogh@qut.edu.au

Such stories of the surreal realities of what happens under the hood of videogames are typically presented by journalists, players, and gamemakers themselves as humorous stories of the smoke-and-mirrors shortcuts that gamemakers take in lieu of producing a perfectly simulated world where everything works 'properly'. Speedrunning communities, who regularly find such quirks while hunting for exploits that will shave time off their run, are particularly notorious for casually framing such design decisions as those of 'lazy developers' (Castello, 2019). That such imaginative so-lutions to technological constraints are primarily discussed as oddities or shortcuts at all is due to a common perception that the videogame creator, equipped with creative vision and cutting-edge technology, possesses the ability to produce seamless, comprehensive simulations.[1] The criticism that the Gamebryo engine 'fails' to simulate moving objects obscures the mundanity of the train-hat as a highly typical, creative response to the quotidian challenges of producing a videogame.

The 'aggressive formalisation' (Keogh, 2019) of the videogame industry through the 1990s and 2000s, and the privileging in this time of technological discourses for determining a videogame's quality (Arsenault, 2017), means that videogame production remains predominately imagined as a commercial and technological undertaking – developers have an idea and then they execute it – rather than as a creative process of *cultural* production. The ways in which videogame makers, like all cultural producers, undertake their work through processes of mediated, non-linear experi-mentation remains poorly appreciated. Rather than as a failure or a shortcut, quirks such as *Fallout 3*'s train-hat could be more fruitfully appreciated as particularly visible examples of how video-games are *crafted* in the moment that creator, tool, and field enter a negotiation.

In this article, I want to contribute to this special issue's politicising of agency in digital play by arguing that game studies must pay more attention to the creative, iterative, negotiated process of videogame production. Agency, in game studies, including my own previous work, is most commonly considered in terms of the player's agency as it emerges from or is facilitated by the played videogame (Jennings, 2019; Keogh, 2018). In this article, I wish to look beyond the closed circuit of videogame-and-player, to also consider the mediated and mediating agency of the videogame maker. The mechanics, narratives, aesthetics, and genre conventions that have been extensively examined by game studies theories for how they mediate, shape, or afford the player's agency are themselves not simply 'chosen' by the videogame producer in any straightforward manner. Instead, they emerge from complex production cultures and embodied engagements with software tools. While the subfield of game production studies has in recent years drawn more attention to the lived experiences and political-economic contexts of videogame production (Sotamaa and Svelch, 2021), game studies more broadly could better account for how the vid-eogame 'work' comes into existence when analysing the experiences players have with a videogame text. Just as scholars of other media consider the relevance of paint strokes, film stock and musical instruments when analysing the works of their chosen medium, the videogame scholar's analysis could be enriched by considering the videogame maker's use of sprites, shaders, and train-hats.[2]

One way this can be done is by considering videogame production through the lens of *craft*. Craft, as will be detailed below, sits in tension between an individual's own embodied repertoire of skills, the affordances and constraints of material tools and media, and the collectively agreed upon and legitimised conventions of a field. While other theorists have recently begun to use craft to consider the consumption and creative practices of videogame players (Brock and Fraser 2018; Brock and Johnson 2021), it also provides a fruitful opening for us to consider videogame pro-duction not as simply the technical realising of a pre-determined idea, that is, but as a cultural process producing – or perhaps more accurately revealing – a cultural artefact through mediated, embodied, and material means.

While this argument is primarily a theoretical one, I build it from semi-structured interviews I conducted with videogame makers between 2018 and 2020 for the Australian Research Council-funded research project, "Formal, Informal, Embedded: Australia Game Developers and Skill Transferability". 205 interviews were conducted in total: 167 across Australian capital cities and 38 distributed across Montreal (12), Seattle (6), the Netherlands (15), Berlin (3), Jakarta (1), and Singapore (1). Interviews were conducted with videogame makers working across a wide range of formal and informal contexts, as well as with educators, students, and institutional representatives. Interview questions focused primarily on labour conditions, skill development, and future career ambitions, and gamemakers' articulations of the need to develop their craft were a common theme. For instance, when I asked Leena van Deventer – a freelance writer, designer and educator in Melbourne – what she finds most challenging about videogame development, she asked me to clarify: 'Like, in terms of the craft or culture? … Just getting the time to sit down with the craft and actually do it [is challenging]'. In Sydney, Alex Carlyle is a creative director at one of the country's larger studios. When I asked him what the role of a creative director entails, his answer included the explanation that 'the craft of game design is like a puppet show, right? You want people to be sucked in and be completely unaware of the strings that are pulling the things behind the scenes'. To make videogames well and with care, it seems, requires the time and autonomy to develop one's own craft. But then, if done well, that care might never be recognised or appreciated by the player at all – or indeed by the researcher.

The first section collates existing literature on craft as it has been understood by cultural production and creative labour theorists. Here, we will see how one's craft comes to be considered as one's internalised, individually possessed set of skills that is itself produced in negotiation through both an embodied engagement with tools and medium, and the social positioning of one's habitus within a broader field. The following two sections focus on each of these aspects of craft in turn (embodied engagement with tools and medium, the broader social space of one's habitus) as they were articulated by the videogame makers I interviewed. The second section looks at how videogame makers articulate their relationship with videogame software tools, such as game engines, as one of both desired control and productive constraint. The third section then considers the roll of local communities, meet-ups, and collaborations to situate the videogame maker's craft socially as a position within the broader field of videogame production that is always relative to – and in struggle with – every other position in the field. Finally, the paper will conclude with a reflection on how a consideration of the craft of videogame production opens new avenues for the videogame critic or theorist to evaluate and assess videogame artefacts as not only played content, but as produced, mediated, and negotiated form.

Craft, tool, field

As a medium long touted by gamemakers, audiences, and researchers alike for its interactivity and immersion, videogames are often thought of (and, indeed, marketed) not as created artefacts but as simulated worlds a player steps into and determines the use of. The agency of the creator is sidelined to prioritise the agency of the player, and so appreciating just *how* a videogame is made becomes difficult. A videogame development student in Brisbane succinctly articulated the consequences of this obfuscation of videogame production. When I asked how studying videogame development differed from his expectations, he explained:

"I thought it would be easier. I didn't think 'oh you have to program bullets'. Bullets don't just come out. You have to tell them what to do. When I was young and first getting into games that's exactly how I thought it worked: you just placed these things together and it makes a game."

For this student, as with many novices I spoke to, there was a sense of surprise at the level of granularity the videogame production process required from the human creators. You cannot just click-and-drag bullets into a game and expect the computer to make them work *as* bullets; you must first make every necessary aspect of bullets – the physical object, the sounds, the metaphysical constraints and behaviours, the consequences of their collision with other objects – from scratch. The gamemaker does not simply 'place bullets' any moreso than the woodworker simply 'makes a chair'. Rather, in each case, creation is a process of developing embodied skills in the negotiation of tools and materials towards an intended outcome – that is, a craft.

The concept of craft brings with it several challenges – not least of all its nebulous, evasive, and contested meanings in both art criticism and creative labour theory alike (see Adamson, 2013; Banks, 2007; Frayling, 2011; Luckman, 2015). In its most crude usage, craft differentiates – often along gendered, racial, and class lines – simple 'crafts' from more esteemed, disinterested and intellectualised 'art'.[3] Craft can also designate not only the category of artefacts made, but the learned processes and dispositions of *making* undertaken by an individual – a craftsperson – to produce artefacts that have both practical and aesthetic qualities. Here, we can think of the craft of the woodworker or the craft of the stonemason. Scholars like Richard Sennett (2008) and Peter Korn (2013) write of craftspeople (or often, tellingly, of crafts*men*) refining dextrous skills and working with a deep, phenomenological knowledge of material medium, at-hand tools, and social conventions to holistically create artefacts. Likewise, Karl Marx in *Capital* (2011 [1867]) regularly refers somewhat romantically to the pre-industrial craftsperson to contrast the rote, alienated assembly line factory worker. In such cases, craft inherits positive value judgements of professionalism and care that can be most clearly seen today in the aesthetic privileging of the 'handmade' over the 'mass-produced'. More broadly, beyond those few disciplines populated by 'craftspeople', to talk of practising or honing one's craft, is to talk of a particular level of care, intimacy, and skill that one brings to their professional activities, be it making a chair or conducting heart surgery.

In the cultural industries, Mark Banks (2007: 38) thus uses the term 'craft cultural production' to describe smaller scale, more autonomous mode of cultural production where 'control over the conception, design, and manufacture of a cultural good is possessed by individual or small groups of workers, operating at close quarters in "workshop" conditions'. In cultural work more broadly and in videogame production specifically, this can today be seen most clearly in the rise of 'indie' (Lipkin, 2013) or 'entrepreneurial' (Oakley, 2014) modes of production, where the rise of digital distribution platforms, high-speed internet and more accessible (both technically and economically) digital tools have encouraged people to 'follow their dreams', 'be their own boss', and turn their side hustle into a career. Today, craft modes of production allow cultural producers – including videogame makers – to 'maintain a spiritual, emotional, or artistic connection with their work, even as it is harnessed by capitalists to generate new, innovative, or meaning-making commodities' (Banks 2007: 29).

As videogame production joins the growing number of sectors of work captured by what Angela McRobbie (2016) calls the creativity *dispositif*—a suggestive rather than coercive form of capitalist governance that veils worsening work conditions with the exciting call to 'be creative', it is perhaps unsurprising that more and more people – including videogame developers – thus also speak of having a craft: an individualised approach to their seemingly creative work that differentiates them from the countless other equally qualified prospective workers competing for the same gigs. In an

age of insecure work where a growing sector of the population feels the pressure to be an enterprising self (Lorusso, 2019), investing in one's own craft becomes vital to ensure one is 'employable' enough for the next insecure gig of one's portfolio careers (McRobbie, 2016). In such 'detraditionalized and individualized social environments' that define contemporary cultural production (including that of videogames), 'practice-led craft production can actually flourish… Indeed, the revival of craft production amongst amateurs, artisans, small firms and enterprises is becoming a more prominent feature of late-modern life' (Banks 2007: 132).

In interviews, gamemakers regularly articulated their day-to-day work as one of creative practice and experimentation, rather than simply rote technical work. Elissa and Leigh Harris, for instance, are a sister-and-brother development team based in Sydney. While Elissa is the more technically skilled of the two and is responsible for their games' programming, she stresses that 'any technical skills that I have are a means to an end. Creative stuff has always been the drive'. For Elissa, this greatly impacts how their studio runs as a business, and what projects they decide to undertake:

> even if it made perfect business sense I can't picture us making a sports game because we don't have the interest so it'll probably bore us. Whereas something like [our current project], the process is really interesting. It's frustrating at times when it's an enormous game for a tiny team but still, it's something we enjoy the process of.

This was hardly a novel response. Gamemakers regularly drew attention to the importance of intrinsic drivers of their work – of enjoying the process itself and of being 'dedicated to good work for its own sake' (Sennett, 2008: 20). Interviewed gamemakers working at all scales of videogame production were centrally concerned in their day-to-day work with becoming better at gamemaking through gamemaking – a process of developing and sharpening a set of skills that some interviewees, such as van Deventer in this article's introduction, explicitly referred to as their craft.

But what are these skills? They are not simply intellectual knowledge – knowing how to make a game – but are fostered through and emerge from the continuous relation of embodied practice, material medium, and at-hand tools. The embodied skills of a craftsperson are skills in how to hold a specific tool; how to understand materials through touch and feel; and how to attune one's body in relation to, and extend one's senses through, the 'appendages' (Merleau-Ponty, 2012: 144) that are the tools of the trade. Thus, a craft is not simply applied to a medium by the craftsperson but is co-constituted by the craftsperson's embodiment of the medium and tools. As (Adamson 2013), (4) notes: 'craft only exists in motion. It is a way of doing things, not a classification of objects, institutions, or people. It is also multiple: an amalgamation of interrelated core principles, which are put into relation with one another'.

These 'interrelated core principles', however, are not simply determined by the individual craftsperson, but also by the broader field within which they operate. As Pierre Bourdieu (1983: 344; original emphasis) notes, a '*long, collective labour*' leads 'to the progressive invention of the crafts of [the field]'. Or, as Karen Patel (2020: 9) similarly notes of what she calls 'aesthetic expertise', 'embodied cultural capital which, when recognized as legitimate, functions as symbolic capital (honour and prestige) and can be synonymous with an authoritative position in the field'. In other words, a craft is not simply determined by what is possible through the embodied affordances of a medium and its tools, but by what is expected in terms of social and aesthetic conventions by the field in which the craft takes place. Thus, a field:

> presents itself to each agent as *a space of possibles* which is defined in the relationship between the structure of average chances of access to the different positions … and the dispositions of each agent, the

subjective basis of the perception and appreciation of the objective chances. In other words, the objective probabilities (of economic or symbolic profit, for example) inscribed in the field at a given moment only become operative and active … insofar as they are perceived and appreciated through the schemes of perception and appreciation which constitute a habitus (Bourdieu, 1983: 344)

A producer's position in their cultural field of all cultural producers is in part determined by both their skills and opportunities, and their skills and opportunities are in part determined by their position within the field of all cultural producers' positions. A cultural producer's craft, then, is not simply a set of developed skills through an embodied engagement with tools, but socially recognisable within a particular field *as* such a set of skills. The videogame producer's agency, therefore, is mediated by both the tools of creation and the expectations of the field, and it is to each of these interconnected aspects, respectively, that the article now turns.

Negotiating with software tools

A perhaps obvious quandary emerges when we try to consider the videogame maker's craft as one emerging through an embodied engagement with medium and tools: both the medium and the production tools of videogames are, seemingly, immaterial. Early presumptions about the immaterial and virtual nature of engaging with digital media and computers have been extensively critiqued and disputed by scholars (Hayles, 2004; Chesher, 2004; Richardson, 2009; Dyer-Witheford and De Peuter, 2009), but anxieties persist as to how the computer simply automates or dehumanises creative practice by replacing the musicians intimate knowledge of an instrument with GarageBand's pre-recorded samples, and the artist's careful brushstrokes with Photoshop's preset brushes. It remains difficult to speak of the digital creator's craft when all they seem to do is push buttons. The woodworker has clear and visible embodied skills that I do not, using tools that I do not know how to use. But how is the digital musician, graphic designer, or web programmer's skills, in relation to tools and materials, different to my own ability to touch type on a QWERTY keyboard and navigate a software environment? The craft of digital media is unintuitive not because we do not understand the skills or conventions of the digital craftsperson, but because we think that we do. We laypeople know how to use the same computers, the same input devices, and possibly even the same software. Their embodied skills are not immediately recognisable as 'skills' at all as they sit at their desk, clicking a mouse not dissimilar to how I click a mouse to read my emails. If the embodied skills of digital creative labour was initially unknowable because of a reductive understanding of digital media as an automating and disembodying practice as opposed to itself being a particular material tool to be embodied, it has remained unknowable as digital embodiment has become ubiquitous and we simply fail to understand what the digital creator worker does differently from any other digital worker when they sit 'so frighteningly inert' in front of the 'disturbingly lively' computer (Haraway, 1991: 152).

To better articulate the craft skills of digital producers, McCullough (1998) directly addresses what it means for a craftsperson to work with digital tools. McCullough argues for a consideration of craft less fixated on the control of the craftsperson's hand in understanding embodied skills, arguing that calling any craft artefact 'handmade' obscures the mediating role of tools and mediums in all craft processes (1998: 65). Instead, it is 'the degree of personal participation, more than any degree of independence from machine technology [that] influences perceptions of craft in work' (1998: 69). In other words, it is not just *what* the digital craftsperson does, or *which tools* they use, but – to echo Adamson (2013) above – *how* they do it:

> You [the digital craftsperson] develop a contextual awareness. Like a good pianist you improve your ability to push what you have learned into a subconscious background, so that you don't have to keep so much in mind at any one time. Instead of thinking the actions, you feel the actions and actions stir your memory, and give you a better sense of inhabiting your work. As an expert you sense what to try when; how far a medium can be pushed; when to check up on a process; which tool to use for what job. (McCullough, 1998: 27)

This provides us a way to think more holistically about digital craft production broadly and videogame craft production specifically: it is not the graphic designer's skill with the computer mouse (seemingly identical to my own) that is important, but their skill with that computer mouse in relation to PhotoShop, their knowledge of which hotkeys to press and which presets to use in order to get the particular effect to show at a particular pixel resolution in a particular file format, their comprehension of how different prefabricated elements and processes might be combined in particular, nuanced ways to achieve a desired outcome. Or, as McCullough (1998: 21) puts it, digital work is crafted 'when experts use limited software capacities resourcefully, imaginatively, and in compensation for the inadequacies of prepackaged, hard-coded operations'.

For a highly technological medium, technology itself only makes itself known in a limited capacity in videogame discourses. While the enthusiast press will focus on the carrot-and-stick liberating possibilities of ever-increasing computational power and patented 'technobabble' (Arsenault 2017) with each new videogame console, the technology underpinning videogame works is rarely thought of in a creative sense as a medium that provides affordances and limitations – as like a piece of wood having its own 'grain' that the developers works with or against (Nicoll and Keogh, 2019). In part, this is due to how videogame engines and other software necessary for videogame production position themselves often as neutral platforms capable of achieving whatever the developer imagines. For instance, Konami's Fox Engine was advertised to the public in 2011 as a technology that itself disappeared as the virtual worlds it was capable of producing would be indistinguishable from the 'real' world (Boluk and LeMieux, 2017; Freedman, 2018). The widely used Unity game engine, meanwhile, regularly advertises itself through quick montages of a vast range of games 'made in Unity', promising a flexibility and frictionless to achieve whatever the developer desires.

Ian MacLarty, an independent solo developer in Melbourne, described this advertised openness and flexibility of commercial game engines as itself limiting and disempowering because 'if you have too many things you could possibly do, it's like just a blank sheet of paper and it's overwhelming'. At the same time, however, the fact that Unity is designed to approach particular design problems from particular directions was something that MacLarty found 'really demotivating'. Ultimately, MacLarty thinks his disinterest in using commercial game engines is about control: 'I have no control over [Unity's issues] so I just have to deal with [them]. I find that really frustrating and just kind of not pleasant. I find it much more enjoyable when I have control over the full piece of software'. Thus, MacLarty, who is a trained computer programmer, instead decided to produce his own videogame engine he then uses to produces his games. Tellingly, MacLarty sees this tool and his relationship to it as not dissimilar to a craftperson's relationship to their tools and medium: 'I think it's interesting to use a tool that maybe no one else is using… It's kind of like mixing your own paints or like using some kind of materials that no one else is using… if you're constrained it's kind of it just naturally scopes things down'.

There is a tension here between a desire for 'control' over the tools and a frustration at the seemingly *in*flexibility of commercial game engines – not dissimilar to what Whitson (2018a) describes as the 'voodoo' nature of a game engine refusing to behave as the designer desires. At the

same time, the restrictions and constraints of his own software tools are felt by MacLarty as themselves empowering, as providing a sense of control. When pushed on this sense of control and why it was important, MacLarty articulated that:

> I think as an artist I want my own angle. I think I want my own— it doesn't have to be an 'aesthetic' necessarily— well I guess it is, but it's not necessarily a purely visible thing. *I want a process that's unique to me*. I think that's important to have your own process that influences what the quality of the things that come out of that are. And like the process is interesting in itself.

What it came down to, for MacLarty, it was important to have a personalised sense of control not over the game he was making, but over the process of gamemaking, where both the affordances and constraints of the tools were known intimately and able to steer the direction his videogame production took.

Another Melbourne-based developer, Terry Burdak, worked in a three-person independent team striving to turn their final-year graduate project into a commercial videogame. Unlike MacLarty (but like the majority of developers interviewed), Burdak's team were using the Unity game engine. Like MacLarty, though, Burdak also referred to the open-ended nature of Unity, its marketed ability to make any sort of videogame imaginable, as taking away a sense of control rather than fostering one. Previously trained as a graphic designer, Burdak drew particular attention to the lack of a consistent unit of measurement within Unity when compared to the tools of his previous trade:

> In Photoshop and Illustrator I can get a ruler out, and I can see how long things are. [In Unity] you can put in the 'units' but then there's no sense of space scale because we can just make it up, because it's our own world. But I want to be able to create these constraints of measurement and then work within that. What I end up having to do is get fucking blocks and change the colours of them and space them out … It just irritates me because it is so loose … You just want things to be able to work with your constraints and it's just impossible.

For both MacLarty and Burdak, Unity's promise of openness, of being able to fulfil the designer's every intent and dream, is restricting rather than empowering, effectively producing a 'loose' and empty possibility space in which the creator struggles to position themselves. Each in turn desires a tool that is more constrained and focused, able to provide material restrictions that meaningfully shape their individual videogame production craft.

The open-endedness of commercial game engines are usefully contrasted with how gamemakers, researchers, and players have discussed much more restrictive gamemaking tools used by hobbyists and non-commercial gamemakers, such as Twine and Bitsy. Twine, originally designed as an open-source tool for generating interactive fiction, was taken up by gamemakers, especially queer gamemakers, in the early 2010s to produce a wide range of narrative-driven work. In her analysis of Twine as both tool and community, Alison Harvey notes that 'Because Twine was not conceptualized as a technology of game-making, assumptions about what these kinds of tools do are not embedded in its structure and paratexts in the same way as other dedicated digital game design programs'. (Harvey, 2014: 97). Twine 'has been adopted by rather than targeted at digital game-makers, its affordances identified rather than prescribed as useful for the creation of games' (Harvey, 2014: 97) and so producers working with Twine work within a much more explicitly restricted possibility space.

Bitsy is a similarly limited and accessible program, capable of presenting only two colours, sprites at 8x8 resolution, and minimal interactions. A hobbyist developer in Adelaide, Samantha

Schaffer, made small games as part of a broader art practice that included photography and poetry. Samantha described how they appreciate Bitsy as a gamemaking tool explicitly because:

> it's so limited in the kind of game you can make. You're kind of advertising what kind of game it is by saying it's made in Bitsy. Like, people generally know what they're signing up for when they play a Bitsy game, they're not expecting like an extreme platformer. They're like "yeah, it's just a little world and you wander around; that's Bitsy's thing". Which I do like in terms of filtering out the kinds of audiences that wouldn't appreciate it.

Here, Schaffer, like MacLarty and Burdak above, finds a sense of empowerment through the explicit limitation of tools, rather than a promise of endless freedom. The explicit inflexibility of Bitsy is seen by Schaffer as a strength, contrasted with MacLarty's and Burdak's frustrations of Unity's veiled inflexibility. For Schaffer, this shapes the expectations of their games' players. The explicit limitations of the tool are seen to positively impact the expectations of an audience, as the audience of a Bitsy game is able to comprehend the constraints of Bitsy in a way they might not be able to for Unity or a custom-made engine focusing on frictionless realism and endless possibilities. Because the players of Schaffer's games are themselves conscious of the constraints Schaffer has worked with, Schaffer's working within those constraints can be viewed positively as finding creative solutions, rather than negatively as taking shortcuts. Here, we see how a videogame's style 'partially comes from the artist, but also is determined by the tools used by the artist, and the community the artist works in or for' (Reed 2020: 102). This leads us to the second side of the equation of videogame craft: videogame makers do not just work within the realm of what is possible with a tool, or what they are able to do with that tool, but also what is *expected* for them to do with that tool.

Taking a position in the field

In his work on fields of cultural production, Bourdieu describes how a 'work of art is an object which exists as such only by virtue of the (collective) belief which knows and acknowledges it as a work of art' (Bourdieu, 1983: 317). Works of art only exist as such not simply because of their material production but because of the 'symbolic production' of a collective belief that the object created is in fact a work of art (Bourdieu, 1983: 318). An individual gamemaker's sense of craft, then, is determined by their position within the field and the habitus they have developed therein. This includes what is expected by audiences and critics, but also by other gamemakers in terms of the best way to go about doing things, to understand best practices. Videogame production researchers have shown the crucial role that local, trans-local, national, and global communities and social networks play in the social production of videogame production (see, for example, Jørgensen et al., 2017; Joseph, 2013; Kerr, 2017; Parker and Jenson, 2017; Reed, 2020; Young, 2018). Videogames are produced not simply by discrete teams working in a single studio, but through the collaborations and competing values distributed across formal and informal networks through local meet-ups, game jams, social media platforms, scenes, and personal relationships.

For many gamemakers I interviewed, identifying their own position within their local field was crucial for figuring out who they were as a videogame maker and just what their own videogame craft might – or could – be. Melbourne-based Alex Perrin worked in a partnership that undertook both original projects and client-based contracts. Perrin described the broader Melbourne videogame development community as 'invaluable':

I couldn't have got anywhere without it … Just kind of knowing what everyone is moving towards and what everyone is interested in moving towards. I think in a time of such relative uncertainty about what we are, what we should be trying to do, like there's no definitions at the moment. No definitions that I want to adhere to. So just talking to people about what they're doing and why they're doing it just gives you ground to stand upon and is motivating and makes you feel like you have something to do.

Just as Bourdieu observes that every position within a cultural field is defined in its relation to and struggle against every other position, Perrin explicitly relies on knowing what other gamemakers in the local field are doing, and what positions they are taking, to better understand his own position and craft within the field.

However, the ability of the field to provide reference to help one build their own craft as a specific position in a field was felt primarily as a lack for some gamemakers. While there is a general sense (and pride) of openness among independent videogame makers in terms of their willingness to share strategies and information, and while there is no shortage of literature on how to design videogames through post-mortems given at industry conferences, videogame makers spoke often of a general absence of collective best practices to guide their own craft. Alexander Ocias, a Sydney-based artist who makes videogames, complained that:

to me there's such a lack of community and collective building and sharing of arts skills, and a lack of access to mentorship and older people who have been through these problems in this field who can say 'oh no this is the mistake I made when I was your age' … It's difficult for me to say why my art practice isn't moving forward.

Similarly, van Deventer, who we first heard from in the introduction of this article, expressed that 'not really having any best practices established from which to research' was a major impediment 'craft-wise'. Some felt the existing ways they were expected to undertake game production were too narrowly defined, compared to the best practices of more established disciplines that were usefully restrictive. For Burdak, again drawing from his graphic design expertise:

Like, typography is a discipline, you know? And even like colour and all that visual communication. All those different levels have all become their own disciplines as well. That's how long they've been around for. And there's now generations of these grumpy people who have been doing a particular thing for so long they become masters of those disciplines. [But in game design] all the oldies are just grumpy with their own particular method, which is incredibly dated. And that's what's really ridiculous about it. Any sort of formalism that they try to fucking hold onto is just literally of another time and is almost redundant now. … It's literally just hanging on to what they feel comfortable with and that's it. It's not anything else.

Each of these frustrations demonstrate how, in spite of a general sense of strong community and collaboration among videogame makers, a lack of ability to collectively identify what are the best practices of videogame production hinders individual gamemakers from defining or growing their own craft.

Often, this came from a disconnect between the creative desires of individual producers, and the commercial imperatives that pressure gamemakers to ensure their videogame fits within pre-existing and well-understood genres and categories. Nick Rudzicz, a Montreal-based developer working in a team of 10, felt this frustration acutely:

> There is still the sense [that our studio are] outsiders and just trying to do different things. [Our recent game] could have been just like a pure toy, but it would have been harder to market that. So you add this puzzle element because people would sort of understand that. But I think like most of the game designs we're coming up with start from this place of like, 'We just want to goof around on our phones' or whatever. And without necessarily attaching a specific genre to it.

Consequentially, local community networking events often left gamemakers unsatisfied when it came to developing their sense of their own craft, or their desires to learn the best practices of the field. Ocias, for instance, was unsatisfied with Sydney's regular gamemaker meet-ups, describing them as 'very much like a kind of a technical college graduate gathering point… very much within that ideology of commodification'. Whereas the local game developer meet-ups were, for Ocias, overly focused on issues of commercialisation and business, what he felt his craft needed was a community more akin to what he had during his university studies in a Fine Arts programme: 'we were just showing each other stuff so quickly and just on the same wave length'. That is, he required a community focused on the process of videogame production, not just on videogame products.

An anonymous gamemaker, working in a five-person commercial independent studio in Melbourne, felt a similar tension within their workplace that 'alienated' them from the broader community and, consequentially, from their own craft:

> There's this constant distancing and embracing that I find hard to navigate working at [anonymised studio] because these aren't my games. I don't feel like I have my identity. I'm not maturing my own creative talent; I'm just getting better at working on someone else's things. That is combined with how totalising the work is and how I don't have time to work on [side projects], that can make me feel very alienated from my own creative practice and from what all my peers are doing. I kind of feel I'm not as creative as I used to be and not as engaged with all the interesting creative stuff that's going on in Melbourne.

In each of these situations, gamemakers articulated their ability (or inability) to develop their own craft through their relationship (or lack of relationship) to the broader field of videogame production, either in how their own craft was encouraged, ignored, restricted, or disavowed.

There is, of course, a gendered dimension to the ability of individual videogame developers to develop their craft – or, alternatively, to have their craft adequately recognised by the field as a craft at all. As Patel (2020:119–120) shows, 'those who are not male, white and relatively privileged have never been widely considered to have any type of expertise in creation. The skills and knowledge of women and people of colour have been denigrated for centuries'. Examples of this happening in the field of videogame production are countless, but one exemplar is when designer Raph Koster (2012) dismissed Anna Anthropy's own craft as a videogame developer by claiming Anthropy's acclaimed *Dys4ia* was not a game at all because it 'could be built in [Microsoft's] PowerPoint'. In this context, Schaffer's point above that they enjoy working with Bitsy because it '[filters] out the kinds of audiences that wouldn't appreciate [the game]' could be re-evaluated as a pre-emptive disavowal of the field, and consequentially an inability of being recognised as having crafted a videogame at all.

Conclusion

In the lead up to the release of Rockstar's *Red Dead Redemption 2* creative director Dan Houser justified the tight-lipped secrecy of his studio in a press interview, saying that it ensures 'games are still magical. It's like they're made by elves. You turn on the screen and it's just this world that exists

on TV. I think you gain something by not knowing how they're made. As much as we might lose something in terms of people's respect for what we do, their enjoyment of what we do is enhanced' (quoted in White, 2018). The comments were not received well by the broader gamemaking community, considering the number of stories at the time accusing the studio of extensive poor labour practices throughout the *Red Dead Redemption 2*'s production. *Red Dead Redemption 2* was in fact not made by elves; it was crafted by a large assortment of human beings working creatively with software and hardware limitations within the social and cultural contexts and expectations of triple-a game production.

I have previously argued that 'Any easy distinction between agency that originates from the player or from the machine collapses in videogame play. Agency is instead distributed through the *circuit* of player-and-videogame' (Keogh, 2018: 40). However, this can and should be taken further. Politicising agency in digital play, as in the goal of this special issue, requires researchers of digital play to consider agency *beyond* the closed circuit of videogame-and-player, to also consider the mediated and mediating agency of the videogame maker. It has been my goal with this article to make the preliminary provocation that videogame scholars, if we are to adequately comprehend and appreciate the cultural products of the medium we study, must work against the black-boxing of how videogames are made to, opposed to Houser's comments, make videogames *less* magical. We must investigate how they are made as cultural artefacts, not just how they are played as virtual worlds. To return to Carlyle's puppetry analogy in this article's introduction, we must make visible the strings that the videogame designer strives to hide.

As game production studies' studio studies (Whitson, 2018a), community studies (Young, 2018; Joseph, 2013; Jørgensen et al., 2017), and detailed analyses of specific software tools (Foxman, 2019; Harvey, 2014; Nicoll and Keogh, 2019; Reed, 2020; Whitson, 2018) draws more attention to the lived experiences and political-economic contexts of videogame makers, it is becoming increasingly feasible and necessary that game studies more broadly accounts for the tool affordances and production cultures that produce the craft processes that in turn produce the mechanics, narratives, aesthetics, and genre conventions that players engage with. If we can assess paint strokes, film stock, and musical instruments, we must also consider the videogame producer's choice of sprites, shaders, and train-hats.

In this article, I have considered videogame production as a craft as one way to make a space for such a consideration of videogame-making agency. Videogame makers are not simply skill-possessing experts conceiving and then developing software products, but are craftspeople driven by a continuous and iterative desire to do 'good work for its own sake' (Sennett, 2008: 20) — a desire that is often in tension with, as van Deventer describes, 'the neoliberal bullshit that's stopping you from actually getting work done.' Videogame makers articulate the development (or lack thereof) of their craft – their ability to produce videogames gained through the process of producing videogames – as partially determined by the tools they use, the expectations of their peers and audiences, and the realities of trying to survive economically as a creative practitioner under capitalism. Continuous, often mundane negotiations with other producers, audience expectations, market logics, and software environments shaped individual gamemaker's articulations of their craft – or what was alternatively referred to by some as their artistic practice, creative talent, or method. Further, this sense of craft was foundational to their own sense of identity and growth as a creative practitioner. While 'control' over the videogame production process was a common theme and desire, this control was typically understood as requiring, perhaps counterintuitively, the constraining context of software tools and social expectations.

This reinforces Jennifer Whitson's (2018b: 15) observation that,

the final shape of games is often the result of unintended workarounds initiated not by solitary designers/ authors but by the team in response to recalcitrant technology… Ultimately, learning how to develop games is a situated, collaborative practice that is enabled by software tools [that] structure how we enter into the world of making play, how we meet and interact with other communities and social worlds, and how we come together to collaborate.

To understand videogames as cultural artefacts and the processes that produce them as processes of cultural production is to understand how the videogame is a product of the creator's craft that is itself collectively negotiated by both human and nonhuman actors.

Platform studies (Montfort and Bogost, 2009), studio studies (Whitson, 2018a), community studies (Young, 2018; Joseph, 2013; Jørgensen et al., 2017) and detailed analyses of specific software tools (Reed 2020; Harvey 2014; Whitson 2018b; Nicoll and Keogh 2019) have all already made valuable insights in this regard. What I am arguing here is that the insights from each of these areas could be fruitfully combined with the detailed textual, narrative, and mechanical analyses of game studies to reveal new sites and articulations of how, and in what contexts, the player-and-videogame generates cultural meaning. Any sense of player agency emergent from or mediated by the videogame could itself be contextualised as mediated and co-constituted by the craft of the videogame producer as they negotiate with their existing skills, the tools of their trade, and the social expectations of their field.

ORCID iD

Brendan Keogh   https://orcid.org/0000-0003-4565-4641

Notes

1. Here too we can think of how bugs and glitches are often presented in the enthusiast press as a consumer rights issue, rather than more simply as a material quirk of a cultural artefact. The very idea that a videogame *shouldn't* have bugs suggests that a videogame *should* be made 'perfectly'.
2. Of course, some scholars already do so. Aycock and Biittner's (2019: 202) archaeology of *Mystery House*'s code in order not to consider the game's 'procedural correctness or faults, but as a means to say something

more broadly about the culture of game design, and of the human process of creating games' is but one recent example.

3. Susan Luckman in particular has extensively researched how crafts, handicrafts, and arts and crafts represent a site of feminised, domestic and rural creative labour largely overlooked by the upswell of 'creative industries' research preoccupied with the economic potential of digital media industries (Luckman, 2012, 2015).

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Author biography

Brendan Keogh is a chief investigator of the Digital Media Research Centre and a Senior Lecturer in the School of Communication at Queensland University of Technology. He researches cultures of videogame production and consumption.