Stamp of Approval:

A Prosopography of the UK Midlands Videogame Industry the

Alex Wade

and

Adam Whittaker

Abstract

This paper examines the history of videogame hardware and software development in one of the UK's most famous, but most secretive videogame development houses, Rare. David Harvey's framework of flexible accumulation is deployed to study modes of production and consumption, distribution and circulation. This allows for arrangement and interrogation of emergent concepts of materiality and immateriality in the early UK videogame industry in the UK Midlands. With the Midlands an historic and contemporary hotspot for videogame development, a rich and untold history of games is unearthed with reference to fraternal 'chains of approval' where distribution through family relationships and practices becomes a key element in the success of Rare and other software developers and publishers such as Elite, US Gold and Codemasters.

The paper achieves this by introducing a wholly original methodology to media studies in the form of prosopography. This is a mode of inquiry that facilitates investigation of the characteristics of specific populations, often historic, where individual biographies are difficult to trace, or are not well-documented. By using a range of sources, including scattered records, testimonies and objects previously unapparent links between phenomena can be revealed. In this chapter, this is achieved through reference to historical work on arcades in the UK and especially the Thomas' family development of coin-op games in the East Midlands during the 1960s, leading to coin-operated videogames being developed and published in the same area in the 1980s, before becoming a zone of home computer development in the 21st century, with a special focus on the world famous Rare. This rich history is informed by interviews with current employees which positions the UK as one of the fountain-springs of UK videogame development reaching far beyond its own origins.

In conclusion, the paper locates the Midlands videogame industry as part of a tight link in the uneasy relationship between technology and those who produce, consume, circulate and distribute them. While it is arguable that there would be no UK videogame industry without the East Midlands, it is equally arguable that the cultures of the UK industry, in their fraternity and paternity, would not exist without the wider social links found in the political economies of the East Midlands.

Keywords

Histories of UK Videogames; Videogame Production; Production Studies; UK West Midlands; UK East Midlands

Game Before

The UK and the English Midlands are respective international and national hubs of game development. The UK industry was valued at over £5bn in 2017 with 2200 active companies. Of these companies, over 10% (250) are situated in the English Midlands with the region accounting for 13% of all videogames ever created in the UK (DIT 2019). Given their commercial, technological and critical accomplishment it is crucial to identify the trajectories of the region to a media which, unlike many others, appears to grow with immunity from economic and biological contagion. In reference to primary data, complemented with material from other sources, this paper puts forward a prosoprographical investigation into the histories of videogames as a future direction, making connections across space and time to examine the ways in which distribution has driven the English Midlands' position as a centre for videogame development. Spatially, this is found in the amusement arcade industry which is usually associated with towns and cities dedicated specifically to leisure such as Blackpool, Weston-Super-Mare and Southend-on-Sea (Downs 2010), or large conurbations such as Manchester, Birmingham and London, rather than the English Midlands. Temporally, it is found that videogames draw on practices from pre / post and industrial revolution practices which shape its own industry and its relationship with others, often drawing on the historical geography of the position of the English Midlands as the 'cradle' of the industrial revolution. Applying studies of materiality from Harvey (1990) and Hayles (Gitelman, 2002) the chapter finds how spaces and times spiral and plait to reveal modes of working in a 'chain of approval' that were presumed incompatible with hi-tech industries such as fraternal / paternal modes of organisation, were assumed archaic, such as cottage industries, or are simply barbaric, such as sweatshops. As the chapter explores these are found materially in the economic transition from tangible products such as magnetic media (arcade machines, cassette tapes, cartridges) distributed through immaterial networks that existed fraternally, but may have used materiality in their circulation such as goods vehicles and high street stores. With this, the chapter offers a new perspective on the liminal spaces that materiality occupies in its histories as well as its current

iterations, showing that these are not based around irresistible rise of the Internet and network society, but where practices in place long before that. For instance, while games as a service (GAAS) and monetisation are seen by many players as plagues on the current industry, enabled by closer computer network infrastructure and digital pay-layers, they could equally be seen as occupying a niche and aspirational position in the early videogame industry, especially with the inclusion of goods alongside magnetic media such as artwork and clothing. This includes signed posters and t-shirts, giving rise to the 'collectible' industry which is effectively a global multi-billion pound second hand market trading in rare goods many of which are no longer produced, or if they are, not in their original material form, instead being emulated on software or hardware.

With the conclusions of the paper in mind, , it is important to be aware that there was no evidence from the interviews or other data collected that the long hours associated with 'crunch' discussed in the conclusion to this chapter were expected by the interviewees or any employees of Rare.

The nature and complexities of the issues set out above present significant challenges for scholars of game history. Examinations of individual companies, development teams, and purchasers offer one way to understand histories of games, but there are hidden hierarchies and relationships that are perhaps more significant in shaping notions of history. Capturing these relationships and the ways in which such flows of information, people, ideas, hardware and software develop over time has the potential to offer transformative perspectives on the burgeoning games industry of the 1980s/1990s through to the present day. Tracking these in specific moments, let alone over time, is made doubly challenging by the often limited exploration of the institutional histories of some key agents, and the necessity to rely on testimony from individuals involved spread across numerous different publications. Indeed, as the present article argues, the distributed nature of game development and consumption, means that there are a number of overlapping and intersecting networks at play, in terms of personnel, hardware/software, and places to name but a few parameters, all of which are structured slightly differently.

Rather than see this as an insurmountable issue, however, the geographical proximity of many key stakeholders presents methodological opportunities. A prosopographical inquiry has the potential to better capture the full extent of these networks, illuminate hitherto unidentified connections and influences, and transcend historical investigations bounded by predetermined characteristics. Prosopography also enables the exploration of material encounters with things no longer present, something that is increasingly important in games histories as hardware and software platforms quickly reach obsolesce with relatively limited infrastructure for preserving and archiving such

materials. In short, it enables the mapping of the material conditions of a segment of the video games industry.

Fielding Prosopography

Put simply, prosopography is an approach to historiographical research which takes account of lesser-known individuals whose lives may be documented in more fragmentary and sporadic ways in scattered records, objects, or testimonies. Prosopography is therefore a mode of inquiry that facilitates the investigation of the characteristics of specific populations, often historic, where individual biographies are difficult to trace, or are not well-documented in archival sources. It differs from sociography in that it investigates the characteristics of a specific population, rather than a broad section of society at large, but there are clearly points of overlap and mutual support between the two. Though it has gained some traction in sociological inquiry in recent decades, it has traditionally been associated with research into early historical periods, especially classical civilisation, where written records about people outside of a ruling elite connected to powerful institutions are scant or fragmentary at best. Through combining seemingly insignificant fragments relating to lesser-known individuals it is possible to identify points of connection between people, events, and places. It is through the assemblage of a broad range of evidentiary fragments, coded and tagged to enable large-scale combination, that we unlock the full evidential potential of material that might easily be dismissed as research confetti, revealing insights into individuals, events and material objects that are otherwise lost.

By focusing on specific population characteristics, bounded in chronology, geography and/or institution, prosopography enables the combination of large quantities of specific data to better understand a collective biography of a delimited population group. Isolated ‘bits’ of data, especially about individuals for which little corroborating evidence survives, can be seen as being of limited value to a researcher exploring a narrowly focused historical investigation. However, when combined, these small fragments can produce a rich map of collective biography, illuminating networks between largely unknown individuals, and demonstrating the significance of events and relationships between institutions which cross disciplinary boundaries. Prosopographical methods allow us to move beyond the systematic compilation of individualised biographical data and towards the study of ‘shared biographical details of individuals in aggregate’ (Svorenčík 2018: 605). Shapin and Thackray (1974) recognised the value of prosopography as a way to better interrogate notions of the complex networks of activity in the scientific community, attempting to sharpen its focus on understanding what the notion of a ‘scientific community’ looks like, who participates, and how

knowledge and ideas are shared. In essence, they sought to illuminate the collective lives of a specialist community through prosopography, an ambition similar to that of the present article. As Andrej Svorenčík (2018, 606) observes, prosopography allows us to identify 'hidden hierarchies or relationships that remain elusive when the focus is on the most prominent members of a group'. To Svorenčík's argument we would add that prosopography enables to capture, investigate, and illuminate aspects of materiality which are deeply embedded in these hierarchies that conventional historical inquiry does not bring to the surface. Understanding the true nature of distributed models demands a focus beyond only the most prominent members; something richer and more representative is required and, we contend, prosopography is part of the solution.

From the perspectives of games history, the interplay between people, technology, and social experiences mean that modes of analysis which permit engagement with, and the combination of, a range of different types of evidence are required. The various layers of materiality here, from the interactions between hardware and software through to networks between game developers, promoters, consumers, and wider society, when considered in combination enable us to ascertain an insight into material encounters, even when some of the materials themselves have been lost. Indeed, these can lead to a rich understanding of history and structure of a *field*, to borrow from Bourdieu (1984), alongside individual dispositions (Broady 2002; Rossier 2019). Conceptualised this way, prosopography facilitates the dual exploration of common trajectories through quantitative analytical framing, and the qualitative examination of individual cases, encounters, objects, and biographies and the interactions between these. As is clear from the analysis of the interviews and recollections that follow, there are numerous threads and models of distribution which run across these different evidential sources and are, at present, difficult to consider simultaneously. In the latter part of the article we demonstrate how prosopography provides one way forward in this regard, offering a novel way to understand the materiality of video game histories. In particular, it affords possibilities in mapping the 'double lives' of video games as both sites of activity and material objects (McKeown, 2018), which exist in both the social and physical worlds. Indeed, one might also argue that such an approach has applicability beyond games histories, extending into the broad field of creative arts where informal networks operating outside of fixed institutional borders abound and where distributed and diffuse relationships elide easy categorisation.

The Inland Arcade

In an interview in the forthcoming *Arcade Britannia*, Alan Meades relates how Jimmy Thomas, whose father pioneered the idea of 'inland' amusement arcades, insisted that arcades should be for 'everybody' and especially for 'women who were about shopping or wanted something to do to

relax' (Thomas cited in Meades forthcoming). For the Thomas family, it was crucial that amusement arcades be accessible to all irrespective of gender or class or proximity to other leisure activities (e.g. fairgrounds, fish and chip shops) in time and space. Commercially, the inclusive approach was an unqualified triumph, with Thomas Amusements becoming the most successful arcade chain in Europe by the 1960s and introducing a generation of people to games who may have been obviated if they were limited to holiday towns and seaside resorts.

The success of the Thomas's firm can be partly attributed to its industrial organization. First, while the use of 'vertical integration', where different specialisations of production are brought into one company, were common in Fordist modes of production, they were not common in end-user leisure industries at this time, only becoming so in the silicon revolution of the 1970s and 1980s. The Thomas's brought all functions of amusement arcade production, from the design and sales of machines to shopfitting and building of the arcades themselves, into the Thomas Amusements stable. While it may be tautological to say that older forms of production are copied before being adapted to revised and evolved social and economic modes, Harvey identifies that older labour systems may revive and thrive in late 20th century companies (1991: 152). Vertical integration was deployed efficaciously via 'Silicon Valley' (Hoefler 1971) firms such as Atari, Apple and Intel. Closer to home it became a conduit for the manufacture of microcomputers in the UK, including the BBC's highly centralised Reithian model of informing individuals about the existence of computers via TV programmes, educating them as to how to use them by bringing computers into every classroom in the UK and entertaining them by releasing games for the same computers. This model shows at once how production and distribution, even in its most verticalized forms, becomes wrapped in materialities that exist between the physical world, for example of microcomputers and the social world, for example education (Dale 2005). This is perhaps best seen in the UK with the development of the BBC's Computer Literacy Programme, alongside BBC branded computers (produced by Acorn) which aimed to educate pupils about computers, while ensuring every classroom in the country would have at least one computer by the end of the 1980s (Gazzard, 2016)

Second, the basis of the Thomas's firm in the 'familial' or 'patriarchal' form of company hierarchy is one which leads to the percolation of cultural capital between generations and then structural replication across them. In the interview with Meades, Jimmy Thomas assents to receiving a fruit machine for his tenth birthday and through a material – at the physically tangible and economically utilitarian level – relationship with the object was charged both with keeping it in good working order and being able to keep any revenue it produced. Again, although families have been central to economic activity for as long as bartering, trading or commerce has been a social imperative, this was a model copied by videogame companies setting up business in the Midlands, with the division

of labour based around the distinct skill-set of the individuals involved, stretching across kin and kith lines to encompass and employ individuals who were as much motivated by matrimony as material rewards.

Third, the distribution model favoured by the Thomas's was based around testing the popularity of a machine before it was marketed to potential customers. This was a highly localised arrangement. Thomas's company manufactured gambling machines in Quorn, a village north of Leicester and then deployed the machines to Showboat Amusements in Loughborough, a market town west of Leicester. Showboat Amusements was also owned by the Thomas's as a venue for trialling its success in its target market of inland arcades, far anticipating the weary stories where Atari's *Pong* machine in Andy Capp's Tavern in Silicon Valley malfunctioned after its coin-slot was jammed with a glut of quarter-dollar coins during 1972 (Kent 2001: 43) In a neat parallel which suggests that this hyperbolic tale is not as apocryphal as it sounds, Atari UK's first UK headquarters was in Castle Donington, Leicestershire, ten miles north of Loughborough, where *Pong* was manufactured for the UK market under the parochial title *Wimbledon*. A prototype was sent to a testing-site at the Strathorn Hotel in Nottingham where, as Alistair Crooks, then Director of Atari UK recalls

> The first night it was in situ I received a call as the machine was no longer functioning. The cash box wasn't big enough and the customers couldn't get any more money in. This was quickly rectified and I hung around for the rest of the evening. It happened a second time too!
>
> (Crooks cited in Drury 2016)

As this chapter shows below, informal arrangements around the testing and distribution of videogames in the Midlands followed 'chains of approval' familiar to Thomas Amusements and Atari UK. They often drew on the fraternally symbiotic relationship between developers and publishers and videogame magazines, where material goods such as cover tapes would be distributed alongside reviews and advertising for a company's game in the same magazine. Later, companies such as Rare would distribute videogames to arcades in the US to ensure that *Killer Instinct* or *Battletoads* would mesh with the target demographic of time-rich, cash-rich teenagers, who effectively became the female audience that Thomas Amusements sought to engage with in 1960s Leicestershire in their inland arcades.

Hardwire: Early Arcade Games in the Midlands

The popular and academic lionisation of the UK's 'home' or 'bedroom' coding scene of videogames (see e.g. Anderson and Levene, 2012; Caulfield and Caulfield, 2015) is consistent with the material conditions of 'flexible accumulation' predicated on new sectors of production and especially

'intensified rates of commercial, technological and organizational innovation' (Harvey 1991, 147). Although the UK was notoriously slow in its transition to its uptake of computers in a commercial capacity, firms around the Silicon Fen of Cambridge were able to shift from amateur to semi-professional to professional *a la mode* in two short years. In interview, Paul Machacek (1) commented on the rapid development of the Sinclair home computers in the first three years of the 1980s

> "Look at the ZX80 [1980] which looks like someone made it in the garage and then the ZX81 [1981] which doesn't look like a computer, it's got a really wonky keyboard and isn't what Joe 90 [Clive Sinclair] promised us, but is clearly at a production level much better than the [ZX]80 and then the Spectrum [1982] came a year later."

The embedding of production at the domestic, artisanal level is familiar to studies of British videogames, yet this often focuses on the production of software, not hardware and distribution. Sinclair were able to minimise consumer costs for their earlier computers and radionics as they distributed components via mail order and individual hobbyists would assemble them at home. It is important to note that these were not the purely clean and domestic spaces of the dining room and the bedroom, but the semi-industrial, even planned agricultural, arenas of garages, garden sheds, potting rooms and workshops. This is important as where faulty mechanical, electro-mechanical, electric, electronic and silicon items did not work, finding the tools to enable a 'hack' to take place, was an essential pre-requisite to their repair. These were unlikely to be found in the main living quarters of the house but adjunct areas. These practices became common to early software engineers in the UK who would almost by default 'wield a soldering iron, several of them had weird hobbies around lasers and we bought radio controlled cars and modded them' (Interview with Paul Machacek). Understood in this way, hacking subscribes to Hayles' ascription of materiality as a 'selective focus on certain physical aspects of an instantiated text that are foregrounded by a work's construction, operation, and content' (Gitelman, 2002, 9). Materiality is therefore contingent on the action - the practices - between subject and object, acting as the medium which gives meaning to form and matter, content and function, becoming close to Latour's (2005) 'actants' operating at the social level within actor network theory. Bringing these diverse perspectives together through prosopography opens up a rich potential to place materiality in dialogue with aggregated experiences.

Indeed, the materiality of learning becomes manifest at the sociological level. The trial and error involved in the heuristic learning of the art and science of the hack intersects with the trajectory of industrial organisation during a time which drew upon liminal spaces and times of experimentation where a proficiency for elegance in the style of the hack was as important as the content of it, that

is, what it achieved. A well-known instance is in the 1960s use of university mainframe computers built for calculating the megacorpse of World War III being adapted by their programmers into machines for playing games. The continued rise of companies with strong familial bonds located within domestic or semi-domestic realms recalls a slight return to pre-industrial – and now post-industrial - revolution cottage industries (Johns 2006). Cottage industries are where firms operate from domestic or commercial premises not primarily designed for this purpose and their use brings an artisanal aspect to hardware production. The extension of cottage industries into the realm of education in the pandemic societies of the 2020s parallels the use of schools as sites where games programming and copying would take place at after-school computer clubs.

Indeed, as heirs to the hacker, or hobbyist, ethic Tim and Chris Stamper, the eventual founders of Rare, were seen as inventors first and foremost by those they worked with "that was the way that I saw them, like the crazy inventors in the shed, making loads and loads of stuff and then they get lucky with something" (Interview with Chris Seavor(2)). The role of serendipity or luck, so often seen as the liminal joker in the pack, or the unknown function of games and play, sport and the ludic, also operates as the unknowable and indeterminate function of the materiality of production as predicates, actions, practices, objects or subjects which 'cannot be determined in advance of the work by the critic or even the writer. Rather, they emerge from the interplay between the apparatus, the work, the writer, and the reader/user' (Gitelman, 2002: 9), adding further to the mystery and mysterious nature of the hack and further divining the position of technology in relation to its position as magic when the viewer or audience does not know any better.

The trajectories of a malleable, unknown and perhaps unknowable flexible accumulation of the future still rely on hard decisions to be made in the present. Tim and Chris Stamper were Bristolians who relocated with their family to Leicestershire in the English Midlands so the brothers could study software engineering. Paul Machacek recalls:

> [the] family moved to Ashby[-de-la-Zouch] and Tim and Chris attended Loughborough [University] and the reason they dropped out was because they saw the arcade stuff that was going on around them. Chris was a dedicated programmer and he was on a computer software course at Loughborough Uni and basically went "I know way more than this course is teaching me, that guy over there [the lecturer] knows less than I do"

The Stampers' eventual entry to videogame development is consistent with the selective forces of materialities, technologies and games. First, this is found in the use of their individual spatial and temporal dynamics. As undergraduates, they would have time to access Thomas's Showboat Amusements close-by in Loughborough town centre, their test-sites providing access to the latest machines. Their education on the university courses would have given them initial access to tools and processes that made modifying hardware easier than in the purely domestic realm: by the end

of the 1970s, Chris Stamper had designed and built a computer of his own (Maher 2014). Second, their rejection of formal, higher education in favour of the savviness of soldering irons in sheds embraces the ethos of trial and error associated with material, heuristic learning at the individual level. It also tracks wider social alterations in industrial organisation from economies of scale, based around Fordist production methods through to economies of scope, based around demand led production.

As seen below, this is a key determinant in the movement towards an industry as much marked by distribution as production and consumption. For the Stampers' this melange of materialities led them to working first with Allied Leisure, whose import/export and distribution business also supported arcade operators in updating printed circuit boards with new games. Following this they struck out on their own with Zilec. Based in the Nottinghamshire brewery town of Burton-upon-Trent, Zilec was less than 30 miles from Loughborough and was 'one of only two companies in the UK to 'manufacture and sell *original* arcade games' (Maher 2014 emphasis in original). For Norman Walker, their manager at Allied Leisure, the importance of focussing on what would be popular in the large markets of Japan and the US, allowed economies of scope to come to the fore in the circular logic of flexible accumulation 'They [the Stampers] know what a game has to do to make money. In the arcades, a game has to make money or it will almost literally be scrapped' (Walker cited in Maher 2014). The comprehension of the videogame industry as a global business, informed by forces which are as much serendipitous as able to be flexed and flensed, provided the Stampers with a basis which allowed them to produce videogames for the burgeoning home computer market. This was apexed by the Sinclair Spectrum in the early 1980s, famously canted by adverts extolling the capture of the audio-visual extravaganza provided by the arcade experience in quotidian, domestic settings. Less well acknowledged is the increased awareness that the amusement arcade experience, so readily recognised by the Thomas family, but not widely reckoned with in the UK, had on the importance of distribution to the arcade industry and ultimately to the videogame market more widely.

Centring on Software: The Arcade Comes Home

Before becoming Rare, the Stampers used company names that reflected their geographical locality in the Midlands. This was first manifested as Ashby Computer and Graphics, then trading under a moniker closer to their aims as producers of genre-specific (platformers, shooters) titles as Ultimate: Play the Game, becoming Rare, an unironic and immodest reflection of their ability, talent and status in UK videogame production in 1985. Inserting themselves in liminal spaces between the US and the UK, Rare converted famous primetime American gameshows to home consoles to make ends meet,

'at the beginning Rare was making a lot of games that no one knew about, *Spot the Ball*, *Wheel of Fortune*, *Jeopardy* that sort of thing' (Interview with PaulMachacek)), before starting their own franchises including *Battletoads* and *Killer Instinct*. While the development of videogames was a known quantity in the sense that the individual had complete control over the means of production, publication and distribution was more difficult. Junior developers making contacts with publishers were interactions encumbered with unknown and unwanted outcomes: "some of it was "hello I've got a game, can we talk?", and some of them I would put a cassette into a jiffy bag and send it off. I was dealing with a lot of software houses, some of which had ripped me off."

(Interview with Paul Machacek)

Machinek)

For the Stampers who desired to have vertical, or at least quasi-vertical integration in terms of design, development, production and distribution, unintended consequences had to be minimised. Achieving this drew on a simultaneous fusion of learning from the past to anticipate the future, a wider practice archetypal to computers which simulated the future based on past models. Historical practices espoused by the site-test model, such as those seen at Thomas Amusements, were combined with new and innovative methods. Individual charisma and the dominion of persuasion coalesced with domestic mobilities (automobiles) and chains of approval to convince store owners to purchase Ultimate videogames. Bound by blood or matrimony, more secure, if broadly informal, materialities of distribution were generated which have the genuine workaround of a 1970s hack, elegantly negotiating the industrial / informational manufacture transition

> They packaged all of this stuff up and Tim and Chris's dad John, and their other brother Stephen drove all around the countryside. John could sell coal to Newcastle, and he would waltz into WH Smith's or John Menzies and just go "You're going to buy this" and he would talk the store manager into buying a box of stuff from an unknown company and very quickly in a short period of time this stuff was going off the shelves really quickly and then they wanted John to come back with these boxes. They were self-distributing.
>
> (Interview with Paul Machacek))

The economies of scope provided by different skillsets were not typically available to individual coders who focussed on all aspects of videogame production. While they would often be able to undertake art or audio tasks in the programming of a game, the Stamper brothers , along with the Darling Brothers and Oliver Twins of Codemasters in Leamington Spa were able to split the creation of art and audio with technical tasks. The Stampers, like the Thomas family before them, were able to deploy kith and kin with a spectrum of expertise to exploit materialities of game production. The 'chain of approval' described above shows that while store managers may have been unaware of the

quality of the individual games proffered to them, they may have been aware of the wider popularity of gaming, validated by the sales of games within their stores. Store managers possessed the autonomy at a local level to choose whether to stock games or not and what games these would be. The outcome of these methods of distribution was as esoteric as production itself: games would occupy shelves in Boots the Chemist alongside pharmaceuticals and shaving products; local newsagents, with an arcade game tucked in the corner would sell the licensed or clone version on a revolving point of sale carousel on the counter; cinemas would sell games in their lobbies prior to viewing the film the game was licensed from.

Licence to Skill

The videogame industry's early – and enduring – inspiration for licensing titles games from a variety of media appears common sensical. The ubiquity of screen-based media included high-tech American action fare such as *Knight Rider* and *Airwolf,* where screens themselves were the focus of programme content and lent themselves to the wider inurement of young people into a model of flexible accumulation by the media they consumed. They were able to watch the TV programme and play the game at the same time. While graphical constrictions resulted in some odd manifestations – Elite's *Airwolf* saw the eponymous helicopter navigating its way through underground caverns in a semi-platform game – they were commercially popular and drew on and revealed the spirit of the time.

The zeitgeist was especially evident in arcade games (Kocurek 2016), while the licensing of Hollywood products was increasingly popular in the 1980s in bringing films to children and young people who were supposedly unable to view them in the cinema or on television given implicit (watershed) and explicit (BBFC ratings) age restrictions. Yet licensing also seemed contradictory in an industry which was becoming a victim of its own flexible accumulation in the form of rampant piracy where the ratio between original and copied software was 1:10 in the mid-1980s (Bagnall, 2005). This led to a material response from the industry. Ultimate increased the prices of their games to ten pounds, complementing the game with t-shirts, artworks and big boxes that weren't available via pirated copies, the idea being that 'people were less likely to give something away [through copying] if it cost a tenner' (Interview with PaulMachacek). Yet as early examples such as *KikStart*, which included the unlicensed inclusion of the music from the BBC trials bike series demonstrate, copying at the level of consumption was itself being imitated at the level of production, creating an ever-decreasing spiral of distribution and commercial viability to the point where trajectories of materialities converge between these different, but overlapping spheres. For example, Elite Systems, originally involved in licensing TV shows such as *Blue Thunder* perceived

Ocean's Rambo *First Blood: Part II* as a 'rip-off of *Commando*, a game by Capcom' (Wiltshire 2016: 161), even if the title itself was licensed from the Stallone film of the same name. Seeing this, Elite, founded in Walsall in the English West Midlands in 1984, sensed that there may be market for conversions of the original game of *Commando*. So, in a neat reversion of economies of scope, signed *Commando* from Capcom for conversion and distribution on the UK and European home microcomputer market, becoming the template for other Midlands manufacturers, publishers and distributors to follow, with effects that are still apparent to this day.

If Zilec were able to use cottage industry, that is, 'garden shed' techniques to produce the hardware in the hardboard cabinets for amusement arcades and Ultimate were able to bring the graphics and audio of the arcade home via familial entrepreneurship, then Elite brought something more immaterial, but arguably more valuable: the semiotics of the brand itself, selling the imagined myth and mystique of videogames produced in exotic locations such as Chicago and Kyoto to computers which were primarily designed to help with children's homework and family budgeting. One of the forerunners of the race in licensing Japanese and American exotica that would only normally be played in the arcade was US Gold. A development, publishing and distribution company incorporated in 1982 in the English West Midlands Black Country towns of Halesowen and Tipton began to sign titles from the Japanese arcade company Sega. Their 'rampant commercialism' is widely acknowledged as being responsible for 'transforming the industry' (Wiltshire 2014: 413). The publishing arm of US Gold, Centresoft, which grew so rapidly that it had to repeatedly re-locate around the Midlands (Wilkins and Kean, 2015) before ending up Holford, Birmingham to be closer to geographical links which allowed for rapid communication with national and international markets via the mobilities of airports and motorways 'joined forces with Manchester-based Ocean to import, manufacture under licence and market American software under the name of US Gold' (*Crash*, 1984). Now owned by Activision Blizzard, Centresoft continues to trade as a digital and physical videogame distributor from Holford, its historical and contemporary importance to the industry as a distributor overlooked in the glitzy shininess of the latest game from Playground Studios, Rare, Codemasters or Sumo Digital.

The production of arcade videogames mirrors traditional production-line model objects such as cars. Each unit has the same cost: economies of scale have decreasing returns and economies of scope are minimally applicable when a product requires assembling by hand and then shipping overseas to the geographically and culturally diverse markets of the US and Japan. The increasing technological demands of machines which arcade-goers expected to be closer to fairground rides than traditional games which were generally available in the domestic sphere also altered the market. Barriers to entry increased. The Fordist model is in distinction to home videogames where costs of each copy

were spread across the development and replication process, where the greater the number sold, the lower the cost, imitating the copying / piracy model at the commercial / production level. While operating adeptly within the home market via the Super Nintendo Entertainment System (SNES) and Nintendo Entertainment System (NES) the financial backing provided from its shared ownership with Nintendo allowed Rare to continue to produce games for the arcade market. To enable this, Rare adapted the tried and proven method of site-testing used by Thomas Amusements and Atari to gauge the future success of its productions. Reflecting the globalising of flexible accumulation, the test and distribution process was deployed at the international, rather than national / regional level

> One of the Directors at Rare, a guy called Joel Hochberg, was based in America and he started out in arcades in Miami, Florida. He really knew those kind of things, he was that test base, so we would put the units in and see what happened and he would buy the unit and then get all of the cash that comes out of it and it did really well and it was taking around five grand a week.
>
> (Interview with Chris Seavor)

While similar in form to previous chains of approval, embedding the process at the globalised level meant that those who were undertaking the development were unaware of its success and not directly rewarded for it showing how recognition in the form of knowledge and financial reward for the developer were limited, while maximising takings through knowledge of the market for the licensee and broker of the machine

> It was a bit of black arts, how many people bought arcades, who bought them? I don't know what the outcome of that was. I know my bonus wasn't great, wasn't brilliant and then you hear how successful it was in America and it's like "Oh really?"
>
> (Interview with Chris Seavor)

This experience is a phenomenon common to the revolution driven by an increasing reliance on distribution, as 'capitalism becomes ever more tightly organised *through* dispersal, geographical mobility and flexible responses in labour markets, labour processes and consumer markets, all accompanied by hefty doses of institutional, product and technological innovation' (Harvey, 1990: 159, emphasis in original), so centralisation of certain practices and materialities, especially knowledge and revenue, runs hand-in-hand with offshoring, subcontracting and specialisation in specific fields. The technologies and techniques that allow for dispersal of information and labour equally permit concentration of knowledge and liquidity. For those employed and working in the area that Harvey terms 'thoughtware' (1990: 156) industries, where there are extraneous and often exorbitant prices placed upon abstract notions of validated knowledge such as licenses and 'intellectual property', a virtuous circle is generated where licensing from arcade machines, which themselves were based on the licensing of famous stars of the time, entered the home market:

> Joel had his finger in a lot of pies. He was running the arcades getting into publishers, Acclaim, Tradewest, LJN, Milton Bradley, others, he just kept signing the rights to things . . . The first game I wrote [for Rare] was [*Ivan 'Ironman' Stewart's*] *Super Off Road* which came from Joel's links.
>
> (Interview with Paul Machacek)

The Future of Modelling Distributions of the Past

Taking the cases set out above, which outline approaches ranging from cottage industry, familial entrepreneurship, to brand-centric and licensing models of development and distribution, it is clear that there is a rich, but scattered, evidential trail which, when compiled, has the potential to sharpen our understanding of the wider influences of models of distribution across these different entities and approaches. Through the systematic collation of small fragments of testimony, it becomes possible to consider such data both in aggregation across a larger dataset, or sifted to build up a more detailed biography of a key agent. In essence, by drawing upon a combination of specific case studies, coded and tagged according to a predetermined schema, it becomes possible to make more robust general comments regarding networks and relationships that belie easily generalisable classification. Crucially, it also becomes possible to better understand, and capture, the materiality of key objects in these networks, and the ways in which these serve as important nodes in a networked view of games histories.

It is our contention that prosopographical methods have significant potential to transform current understanding of the various networks at play in the Midlands games industry, both historically and in the present day. By gathering 'bits' of data, embedded in testimonies such as those set out above, there are layers of meaning and connection which can easily escape the grasp of conventional sociological inquiry, especially in connection with the ways material objects are important in networked interactions. Through the collation of such data using key 'tags' across a range of different evidence types to facilitate combinatorial analyses, it becomes possible to consider multiple lines of inquiry simultaneously, sifting and splicing a large dataset in response to specific queries. There will be additional evidential trails which offer insight into the qualitative experiences of the networks at play, hidden hierarchies within such connections, and the socialised experiences which represent such a crucial part of games history. These survive as an unintended breadcrumb across interview testimonies; prosopographical methods enable us to follow this trail spread across diverse testimonies and get closer to understanding the materiality of historical games encounters, and the material aspects of games history itself.

For example, although an individual recollection or piece of evidence may be focused on exploring a particular issue or location, it will also likely contain a number of person names, objects, software,

institutions, locations, opinions etc. These other aspects may be dismissed as of peripheral interest for the specific research question at hand, and thus possibly overlooked. For example, the likely connection between the Thomas' arcade machines and the Stampers takes on additional significance as the proximal rhizomatic nature of these nodes becomes clearer. In historical terms, an account may refer to payment to an individual for particular goods and services; this individual is the subject. However, the account may have been witnessed by, or go on to refer to, a number of individuals who, though named, don't actively participate in the transaction or event itself, along with objects, monetary values, motivations for purchase, and trading networks. Despite their somewhat peripheral status, recording the names of these other individuals and aspects could, in turn, provide a missing link in their biography as evidenced by other sources which don't appear to be connected. Their presence is important and can be combined with similar references to establish trajectories over time in multiple data sources. What appears as simply a name on a document, or a passing mention in an interview, could be the linchpin in mapping a series of activities for an individual working in a particular role, institution, field, or geographical location. We begin to see some of these connections emerging in the interviews presented here, but there is clearly untapped potential if we consider what would be possible in combining hundreds of such testimonies in a rigorous manner.

This process need not only be confined to discrete observable data points and could be applied in a more qualitative sense with only small modifications. The processing of quantitative data points can be immensely useful in establishing the parameters of the field, key stakeholders within networks, and hierarchies. However, adding qualitative depth enables us to better investigate perceptions over time, as voiced by individuals themselves, possibly enabling us to 'lift the lid' on the gaming community over time. It also facilitates the exploration of material encounters through personal recollections, filled with emotional and sensory information, with material objects that may be lost.

The Loom of Technology

As noted throughout this chapter, , prosopography affords the opportunity to both look at data in aggregate, and to explore individual cases in greater detail in a qualitative manner, provided that these are 'understood in the framework of the social structure of the field' (Rossier 2019: 11). The precise nature of qualitative investigations may not be immediately clear at first but, approaching data collection as a process of discovery enables inductive analysis of qualitative parameters. Returning to the example of documentary witnesses outlined above, qualitative parameters might include details on the scenario being described, the context in which the record is made, the

relationships between different parties involved etc. For instance, the historical record may give evidence of a simple transactional payment or the enforcement of a fine in response to a particular offense. The amounts are clearly important, but the broader context may illuminate aspects of the fragmentary data about individuals. Such details, though not necessarily important to outlining key dates and persons, are integral to understanding the ways in which persons were related, and the types of scenarios we have records for. In the context of gaming histories, we contend that varied historical data could be combined with a range of evidence on user experiences, recollections on interactions, and ongoing reflections to facilitate tagging of qualitative parameters to explore datasets from rich and varied perspectives that can expand in line with emergent trends. As Apperly and Jayemane (2012) observe, 'the significance of the materiality of games is how they impact on bodies, both individual and collective' (p. 15). Prosopography enables us to map, and better understand, this significance on individual and collective bodies and, importantly, the connections between these. Viewed from this perspective, prosopographical methods have the potential to map relationships between both people, hardware, and software, along with the materiality of experiences which themselves are the evidential trail of often-hidden networks. Recalling David Harvey, 'Aesthetic and cultural practices matter, and the conditions of their production the closest attention' (Harvey, 1990, p.355); prosopographical methods could enable us to map these very conditions and offer informed perspectives on the essence of historical materialism, recuperating aspects of social organisation within such a frame.

In this increasing abstraction of value, which finds its original form in tangible, material forms, first through gift relations, then barter, then tokens, money, then as credit, shares and stocks, the primary function of knowledge is as a container and harbinger of value. This is a position underpinned, not by its dominion in central banks which control inflation and interest rates, but through the technologies and practices of innovation driven by networks of distribution embedded at the local, regional, national and global level. The 'flexible accumulation' common to contemporary societies has to go, has to be *redistributed*, somewhere. In the example of the game economies of the English Midlands, this is in a revolving and spiralling circle of licensing and sub-licensing, based around a studio model where individuals would do little but work to maximise the shares in the firm that were given to them when they commenced employment: both Chris Seavor and Paul Machacek worked long hours, up to '120 per week' (interview with Paul Machacek)(3),

reviving notions of sweatshop manufacture (Harvey, 1990: 152-3). The links to fraternal modes of working are apparent here: a worker who is 'part of the family' is, for better or for worse, more invested in the livelihood of the company as a financial enterprise than with a contracted, disinterested, professional, 9-5 worker. That employees were also motivated by the promise of bonuses – whether they were ultimately paid or not - feeds into recent explorations in production studies of 'hope labour' (Ozimek, 2019), not on the materiality of a permanent contract, but on the hope that good work will be monetarily rewarded. This is a dynamic, exploited throughout the political economy of media industries which trades on the immaterial hope of a better tomorrow with the material production of the moment . Like the flexible accumulation of Harvey, the future becomes something intangible, which draws on the material, embodied labour of today. In latticing the future into the present, hope is the last thing to die.

Therefore, it is fascinating to note that the culture of 'crunch', where employees are expected to work punishingly long hours in pursuit of deadlines, has positive connotations historically but is a negative phenomena in the contemporary industry continues to this day. It has become so widespread and accepted – even expected - that credits for videogames acknowledge how workers have missed the birth of their children and the growing up of family members, a blatant transposal of the familial bonds that underpinned the early days of enterprise in the amusement arcade and videogame industry found in the Thomas's and Stampers' concerns. Extending this premise, there is an emerging realisation that crunch has become outsourced (Bratt 2021) to overseas developers, spotlighting the spiralling, recursive circularity of processes and practices, initially identified in the Midlands videogame industry as broadly positive but are totally abstracted and corrupted over space and time. As distance between people and the effects of practice has decreased technologically, so the speed and proclivity for their disabuse has increased humanly.

It is doubly unfortunate that the region of the East Midlands that Rare hails from has a history of sweatshop practices (O'Connor, 2020) tied to the textiles industry. The reveal of shameful, dangerous, working practices shows how these are predicates mutual to 'traditional' production-line Fordist industries as well as post / pre industrial modes of flexible accumulation. It is geographically resonant, emanating from the histories of a region which has, for better or for worse, from the looms and Luddites of Leicestershire, had a long-standing, often tense, sometimes tragic, relationship with innovation and technology. It is only through a slowing of the perception of time and space enabled by responses to the global crisis of COVID-19 that the local tragedy was revealed, that sweatshops exist in service of the aptly termed pursuit of 'fast fashion'. Writing in 1990, Harvey shows that the typical half-life of a typical Fordist product was 'five to seven years' but 'flexible accumulation has more than cut this in half in certain sectors (such as textile and clothing industries)

while in others, (e.g. video games and computer software programmes) the half-life is down to eighteen months' (Harvey, 1990: 156). This may even seem anachronistic now given that videogame licences such as Codemasters' F1 series are released on an annual basis and videogames are given regular updates and patches that were not possible with previous 'material' means of production and consumption, circulation and distribution Yet the importance of history is evident in Harvey's insight, the position of videogames in economy and society are as much – if not more – reliant on materialities of distribution as production and consumption. That videogames are able to take from the present as well as the past to mould the future shows how they are both drivers of and driven by change which provides opportunities for some and suppresses others. In its form, social media, perhaps the apogee of the techniques and technologies of the distribution condition, influences the matter and content of Rare's latest releases with *Sea of Thieves* a response to Twitch streamers and influencers becoming 'a social media game as much as a social game' (Interview with Paul Machacek). While this paper highlights some of the avenues to be taken in the historical investigation of the importance of distribution, it is the task of the methodology of prosopography to collect and document these over space and time to reveal where, when and how the Midlands videogame industry came to be ascendant in its processes and practices, through its histories and futures and where it is positioned in relation to its antecedents and contemporaries both within the games industry and far beyond its boundaries.

(1) Paul Machacek is currently employed at Rare and has worked on a host of different projects in his 30+ years at the company. He was one of the first employees to be recruited to the firm by the Stamper brothers who was from outside of their fraternal network. The interview was carried out on 9th March 2021 via MS Teams.

(2) Chris Seavor was employed at Rare during the 1990s and currently works independently. The interview was carried out on 12th March 2021 via MS Teams.

(3) The long hours worked at Rare were verified in an article by Parkin (2012). However, the interviewees for the present chapter doubt the motivation of Parkin's account, even if they agree with the figures presented there. This chapter recognises the interviewees opposition to Parkin's account, while leaving the reference here as a means of cross-referring the veracity and extent of long working hours at Ultimate and Rare. This is a phenomena raised by the interviewees with the awareness that the choice was made in order to earn money and that working shorter hours would be possible, but with an accordant effect on reward and recognition. It is important to note that while long working hours may have been a common experience in the earlier days of the company

during the 1980s and 1990s, this has not been the case for a considerable period of time and is not a predicate of the current/contemporary Rare set-up

References

Anderson, Magnus. and Levene, Rebecca (2012), *Grand Thieves and Tomb Raiders: How British videogames conquered the world,* London: Aurum Press

Apperley, Thomas H and Jayemane, Darshana (2012), 'Game studies' material turn'. *Westminster papers in communication and culture* 9/1: 5-25.

Bagnall, Brian. (2005), *On the Edge: The spectacular rise and fall of Commodore*, Winnipeg, Manitoba: Variant Press

Bourdieu, Pierre. (1984) *Distinction: a social critique of the judgement of taste*. London: Routledge.

Bratt, Chris. (2021) 'The games industry just talked about outsourcing crunch and totally missed the point' *Eurogamer* 13th May 2021 available at https://www.eurogamer.net/articles/2021-05-13-the-games-industry-just-talked-about-outsourcing-crunch-and-totally-missed-the-point retrieved 21st May 2021

Broady, Donald (2002). 'French Prosopography: Definition and Suggested Readings'. *Poetics* 30(5-6): 381-385.

Caulfield, Nicola. and Caulfield, Anthony *Bedrooms to Billions*, Nicola and Anthony Caulfiedl (Dir), Gracious Films

Crash (1984) 'US Gold for Britain', News Input, *Crash*, October 1984

Dale, Karen (2005), 'Building a Social Materiality: Spatial and Embodied Politics in Organizational Control' *Organization*, 12(5): 649-768

Department for international Trade (2019), *Midlands Engine: Video Games*, London: Crown

Drury, Paul (2016), 'Untitled' *Nottingham Post*, 1st July 2016, retrieved from Lexis

Downs, Carolyn (2010), Two Fat Ladies at the Seaside: the place of gambling in working class holidays. In Snape, R. and Smith, D. (eds). Recording Leisure Lives: Holidays and Tourism in 20th Century Britain. , Vol 112, Eastbourne: Leisure Studies Association, 51–73.

Gazzard, Alison (2016) *Now the Chips are Down*, Massachusetts: MIT Press

Gitelman, Lisa (2002), 'Materiality has always been in play' *Iowa Journal of Cultural Studies*, 2(1): 7-12

Harvey, David (1990), *The Condition of Postmodernity*, London: Blackwell

Hoefler, Don (1971), *Microelectronics News*, New York: January 1971

Kocurek, Carly (2016), *Coin-Operated Americans: Rebooting boyhood at the video game arcade*, Minnesota: Minnesota University Press.

Latour, Bruno (2005), *Reassembling the Social: An introduction to actor-network theory*, Oxford: Oxford University Press

Maher, Jimmy (2014), 'The Legend of Ultimate: Play the Game' available at https://www.filfre.net/2014/01/the-legend-of-ultimate-play-the-game/ retrieved 1st April 2021

McKeown, Conor, (2018) Playing with materiality: an agential-realist reading of SethBling's *Super Mario World* code-injection, Information, Communication & Society, 21:9, 1234-1245, DOI: 10.1080/1369118X.2018.1476572

Meades, Alan (forthcoming), *Arcade Britannia*, Cambridge, Massachusetts: MIT Press

O'Connor, Sarah (2020) 'Leicester's dark factories show up a diseased system' *Financial Times Online*, available at https://www.ft.com/content/0b26ee5d-4f4f-4d57-a700-ef49038de18c retrieved 21st May 2021

Ozimek, A. (2019) Outsourcing Digital Game Production: The Case of Polish Testers, *Television and New Media*, 20(8): 824-835

Parkin, S. (2012) 'Who Killed Rare?' available from https://www.eurogamer.net/articles/2012-02-08-who-killed-rare retrieved 28th May 2021

Rossier, Thierry (2019), 'Prosopography, Networks, Life Course Sequences, and so on. Quantifying with or beyond Bourdieu?', *Bulletin de Méthodologie Sociologique*, Vol. 144 (2019): 6–39

Shapin, Stephen., and Thackray, Arnold (1974), "Prosopography as a Research Tool in History of Science: the British Scientific Community 1700–1900." *History of Science*, 12: 1–28.

Svorenčík, Andrej (2018), 'The Missing Link: Prosopography in the History of Economics', *History of Political Economy*, 50(3): 605–613.

Wilkins, Chris and Kean, Roger M. (2015), *The Story of US Gold: A very American, British software house*, Kenilworth: Fusion Retro Books

Wiltshire, Alex (2015), *Britsoft: An Oral History*. London: Read-Only Memory.

Alex Wade is Senior Research Fellow in the Centre for the Study in the Practice and Culture of Education at Birmingham City University. As a sociologist he uses social theory to explore phenomenon in society and culture including celebrity, technology and young people, holiday hunger and mental health. He is chair of the Histories of Games Conference Committee and has written two books on the histories of videogames.

Dr Adam Whittaker is Head of Pedagogy at Royal Birmingham Conservatoire. He is an internationally recognised musicologist and music education research specialist. His research covers a wider chronological range, from medieval and Renaissance music theory, and musical topics in stage and screen media, through to contemporary issues in music education. He regularly gives invited talks, with recent highlights including Bodleian Library (University of Oxford), All Souls College (Oxford), Heidelberg University, and Royal College of Music. His recent work as part of the 'Prosopography of Early Scottish Musicians' research team will lead to the first prosopography of Scottish church musicians of the late Middle Ages, resulting from the analysis of thousands of archival documents.