The State of the Art: Western Modes of Videogame Production

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ABSTRACT

This paper intends to offer some preliminary insights into the milieu that produce the world of videogame play. Beginning with an historical overview of the industry from it's inception as a major entertainment medium, I will examine the means by which production of videogames has been set-up and sustained and it's subsequent successes and failures. From here, I will map these instances onto culturally relevant theoretical models. By using empirical data from interviews with developers, programmers, artists and producers throughout the West, I will investigate the current state of the art in the industry and analyse the relationships, differences and similarities that contemporary videogame production has with its antecedents. Finally, I will offer some thoughts on the future of videogame production and the increasing opportunities of expansion it offers to sociological exploration of situated – and displaced – play.

AUTHOR KEYWORDS
Videogame production and consumption, history of production, videogame spaces

INSERT COINS: THE BEGINNING

In 1971 Don Hoefler proclaimed the area on the San Francisco peninsula to be 'Silicon Valley,' a place where companies specialising in electronic computing situated themselves. The following year, Atari incorporated and moved into 'a crude 1,000 –square-foot space in an inexpensive concrete building' [36] in Santa Clara, the spiritual centre of Silicon Valley. [1] Atari's approach to business was typical of a start-up in an infant industry; early on they struggled to see the coin slot for the cabinet., until Bushnell asked Al Alcorn to make an arcade game based on table-tennis. The game, christened *Pong* (1972) was an unqualified success and Atari tripled in size before the end of 1972. To effectively meet demand with supply, Atari turned the creative process of videogame development into an object lesson in mass production, heavily influenced by Fordist principles. Asked to work 16-hour shifts at the minimum wage, unskilled workers were - superficially at least - employed contrary to the Fordist ideal of 'mass production as mass consumption' [27] where the eight-hour workday allows for potentially high consumption. Yet these lengthy shifts at the workface did not reduce consumption, but served to intensify it. While Atari mopped up pools of surplus local labour, employing nearly every person sent to them by employment agencies [38], employees were 'fenc[ing] televisions and buy[ing] heroin' [9]. Consumption was endemic. Atari became a 'notorious Mecca of drug abuse' [39] and sex as piecemeal workers set up a collection 'to help with unwanted pregnancies' [11].

Under Bushnell's guidance Atari's 'work smarter not harder' model bore fruit, his companies approach a mixture of styles. At once echoing 1960's anti-establishmentism, with the view that games development was 'somehow a counter culture thing' [56] it assimilated elements of 1970's functionalism, where the performance of the product was more important than its vintage, or its image; when Atari market tested *Pong* they 'put it on a wine barrel . . . It wasn't even a full size [cabinet]' [13], an approach to beta testing that would never be acceptable to consumers or producers today, who, irrespective of the intrinsic use of a product expect it to at least appear

[1] This paper focuses on the commercial production of videogames and therefore will not examine in any detail the point before the founding of Atari by Nolan Bushnell in 1972. Suffice to say, he played Steve Russell's *Spacewar* incessantly [34] and from there learned how to create hardware for videogames. Ralph Baer, the engineer whose idea for an electronic game on a television screen he allegedly plagiarised, says 'He put the business on the map. In fact without him there would never have been any money in the till.' [35] Therefore, we can see that 1972 is the true year zero of videogames, the point where gaming – to précis Kent's subtitle – 'changed the world'.

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competent. Fittingly, for a creative outfit which frowned on sequels, licensing and copying of ideas, Atari was prescient of the 1980's attitude of 'flexible forms of work organization' [45, 28] with their haphazardly inventive use of temporary labour, employed in a manner which was attuned to viewing work as an extension of consumption. The hazing of the fringes of production and consumption is seen by Ritzer as a key characteristic of the service class in the 21st century [57] and counters the rigid time and motion control associated with traditional secondary industries.

Ultimately, we can identify signs of the Atari approach in postmodern practices of production and consumption evidenced by the 1990's 'computer-geek-as-chic' culture seen in Coupland's sardonic glance at the videogames industry *JPod* [16]. But these resourceful attitudes to work and consumption also caused (mis)association. Traditional coin-op such as pinball and fruit machines historically operated at the lower end of a cash-rich market which included betting and racketeering. Both Atari and Namco of Japan were linked with the Mafia and Yakuza respectively, with fraternal systems of production and distribution demonstrating that innovative approaches transgress established boundaries of norms and values before becoming embedded in the economy. This appears to be a feature of postmodern economic *modus operandi* 'paternalistic ('god-father' 'guv'nor' or even mafia-like) labour systems revive and flourish as centrepieces rather than appendages of the production system.' [29] Whether organised crime was also dictating the hierarchy of videogame labour is not altogether clear. What is apparent from the early days of Atari is that there was no holistic production management technique and they borrowed, as well as devised, a diverse range of practices to achieve their goals.

In spite of this mélange of production, the playing of videogames by consumers remained prescriptive and structured. There was little choice involved in what to play, if a gamer wanted to play *Asteroids* (1979) and *Defender* (1980) on the same cabinet, it was simply not an option. Equally important is where these games were situated: often within the smoky fug of a subterranean arcade that had curfews placed on them for teenagers. Although arcade games proliferated to 1.5 million countrywide in the US during 1982, Bushnell viewed the home as the future venue for videogame consumption. His concept was simple: create a console that would play games that were interchangeable. Similar in approach to swapping the printed circuit boards of an arcade cabinet, the Atari Video Computer System (VCS) had cartridges that were effectively extensions of the hardware, yet it was a triumph of synergy between solid state media in the home, with the other popular consumer wonder of the time, the VCR, relying on electromechanical operation.

The installation of videogames into the home can be seen as part of the upward mobility of videogames as they moved away from everyday spaces into replicating the experience of the public sphere in the home arena. Home consoles were to arcade games what VCR's were to cinema: a threat. In many ways, Atari's 1977 move to the home market was part of wider social change, whereby consumers are encouraged (or coerced) into the productive and consumptive process. Mass production associated with massive choice, with functions to alter the difficulty, speed and number of players, the Atari VCS liberated the consumer from Fordist models of consumption with the choice of when, where and how to play, but at the same time estranged the player from the public sphere; no longer would there be crowds of people watching a high-score attempt on *Space Invaders* (1978), or guidebooks on how to impress the watching masses such as *How to Master the Videogames* [31]. Subsequent books looked at how to master *home* videogames and were written by Atari who were searching for synergy between electronic and print media. With the public sphere no longer operating as the medium between producer and consumer, there was a breakdown in that most nascent of social formations: the relationship. Solidarity at Atari also flagged. In 1978 Bushnell had been forced out by new owners Warner Communications and many at the company felt that it had 'lost its soul' [40] which was manifested in Atari's retail approach which prefigured the tactics of 'clustering' [43] seen by aggressive marketeers Starbucks and The Gap in the 21st century. Atari used its preeminence to saturate the public and private sphere leading to the crash of 1983. It is fascinating to note that the game which is symbolic of the end of the golden age was Atari's *ET: The Extra Terrestrial* (1982), a rushed synergistic motion picture license – the antithesis of Bushnell's drive for creativity - which created it's own Roswell incident as millions of cartridges were buried in a New Mexico landfill.[20] The videogame industry survived through, not in spite of, its transfer to the home, validated by a movement to a dual core of production and consumption.

THE UK SCENE

Atari took a selection of the best and the worst socio-economic models to reach hegemony and subsequent implosion, which eventually concluded with more settled growth for the market as a whole. Nevertheless, the make-up of videogame production and consumption in 2007 has more in common with the UK in 1986 than the US in 1982. This was and remains the basis for the UK's buoyant industry in the early 21st century.

While videogames were attaining orgiastic status in the US, Sinclair released the Spectrum 48k to UK retail in 1982. Conceived firstly as an instrument for business, it quickly became the doyen of videogame development.

Dubbed the 'Spectrum' due to its colour display, it formed a fully integrated home computer, with keyboard, internal speakers, a microprocessor and most importantly, the BASIC **(**Beginner's All-purpose Symbolic Instruction Code) programming language, allowing users to code their machine as well as use it for applications [15]. Priced at an affordable £150, its flexibility was the key to its success, instead of using hardwired bespoke cartridges (as with the VCS) the Spectrum used a cheap and accessible magnetic medium: conventional audio cassette tapes. Additionally, unlike its rival, the more powerful US-built Commodore 64, the Spectrum didn't require a proprietary tape deck, avoiding the need for expensive peripherals. Its diminutive size meant that it could take up residence in limited spaces and its capacity for use on any TV (including black and white portables) meant that the algorithm was written for a quirky and distinctly premodern attitude to videogame production: bedroom coding.

In the public sphere, the UK had a rather ambiguous attitude towards gaming. Large arcades were not uncommon, but they tended to be located in areas of leisure such as Blackpool, Rhyl and Southend; places of seaside relaxation for some and noise and excess for others, traditional blue collar cathedrals of consumption [60] and a noteworthy place for sociological investigation [14]. However, unlike the US where the movement into the domestic realm resulted in astonishing decline, the private sphere became the bedrock of videogame development. As Matthew Smith, developer of *Manic Miner* (1983) attests 'I played Space Invaders in New Brighton . . . and I went on to publish a Galaxians-type game' [64]. When developing *Manic Miner*, Smith used a self-modified Tandy TRS-80 which could only be used at night because the computer 'crashed whenever someone turned the kettle on' [64]. In spite of his nocturnal habits, it was completed within eight weeks and became the first Spectrum game to feature in-game music – aptly for something written at night and situated underground - Grieg's *In the Hall of the Mountain King*. The borrowing from other art forms was not limited to works in the public domain, a co-worker of Smith's at Tandy copied Alligata's *Defender* with the only difference being that 'just the copyright message changed' [64]. The illegal use of intellectual property was not confined to the sphere of production; games copied via tape-to-tape dubbing were traded in playgrounds, the spiritual ancestor to the 'warez' found today which are not-for-profit duplications of material under copyright. A lax approach to enforcement served to prompt innovation. Original programs created at home by Sinclair users were submitted to the plethora of home coding magazines and, while the developer was financially recompensed, it was a penance for the consumer who would spend hours programming reams of code into their computer. This code was often flawed due to a technical error such as a typographical mistake, yet this was part of the appeal. Consumers would make alterations to the program so that it would run properly, learning fundamentals of programming in the process.

The relationships crafted in the early days were vital to success of videogames in the UK. As we have seen, the Sinclair Spectrum, and to a lesser extent the Commodore 64, were commodities that integrated both production and consumption in the same place; it was not only possible to play *Defender* and *Asteroids* on the same machine, but one could also *create* it and, if inclined, share it with others either through magnetic or print media. Although the Spectrum was the product of an advanced urban society on the cusp of a shift to an economy based in service industries, the creation of videogames has more in common with pre-industrial modes of production. An illustration of this are the cottage industries of linen, coopering and metalwork, which allowed peasants to earn a living, along with maintaining a direct relationship with the manufacturing of the product. Similarly with videogame development, the money that was accrued through selling and distributing code was secondary to the skills and the *esprit de corps* that comes from the simultaneous act of production of consumption where 'wealth is not valued for its own sake, but for the private enjoyment it brings' [24]. Wider cultural, social and economic changes were partly complicit in this. The view that videogaming is chafing society is well sewn into the hem of the right wing press in Britain. Videogames are seen as one of the causes of the 'death of childhood' and are the toxins that are degenerating children's prospects for the future [19]. This assumption is problematic. Isolation from more accepted and traditional means of entertainment in the bedroom setting has been a feature of childhood for longer than videogames have been commercially available; Goffman shows with his astute analysis of 'secret consumption' [26] how it is a function that limits parents' influence and demarcates physical and generational boundaries. The consumption and production of videogames by teenagers in the 1980's was part of a reconfiguration to a tertiary/quaternary economy, and many of the UK's finest development teams on 21st century platforms started on the Spectrum and Commodore 64, including Rare (then Ultimate: Play the Game) and the Darling brothers, founders of Codemasters. The consumptive toxicity that is today both abhorred as malignant and lionised as a creative industry by the Labour party [51] is the net result of the production of yesteryear. To address the 'problem' now is tantamount to ascribing the change caused by single-parents to the lament of the decline of the nuclear family: romantic, political and eventually self-defeating.

THEORISING PRODUCTION

As we have seen, analysis of the seminal times of the videogame industry on both sides of the Atlantic lends itself to a diverse and irregular application of models of production and consumption, resulting in as many contrasts as similarities. The industry reached a point of saturation in the US around the time when home computers became widely available in the UK. US consumers were more inclined towards using what they were being sold - hardwired into the process of consumption - whereas the UK was as flexible as the Spectrum's rubber keyboard, flouting copyright and established trade practices to integrate production and consumption seamlessly, a genuine precursor to the user network societies generated today by participatory media culture [32], [55] and 'Web 2.0' applications where the consumer is fully and willingly complicit in the production process. In retrospect, the historical context is telling; while the UK remains a leader in development with 300 of the 1000 active developers in the world situated there, [51] publishers tend to be in the US, the largest market for games on the planet. Clearly, the knowledge industry [21] with its roots in Silicon Valley is closely linked to economies of scope [67] and has spread rhizomatically across the globe. Nodes of companies, regional offshoots from company headquarters, take advantage of their own technologies which further compress perception of space and time to supplement their edge in the marketplace. Microsoft's Xbox European HQ is in Ireland, not the UK, but the advantages are greater: tax-breaks for tech firms locating in Dublin, a pool of surplus labour, and, with English as one of the official languages of Ireland and the unofficial language of software development, differences in communication are curbed and allow it to act as a medium between the US and the UK markets.

Theoretically examining production and consumption in contemporary societies illuminates fascinating dynamics and occasional dichotomies. While there was something naïve, almost primitive about early videogame development in the UK, and to a lesser extent at Atari, modern videogames attempt to produce an environment which is as close to reality as possible, or more accurately, what is felt to be real, as PW[2] says

> we regularly try to mimic the television-style of broadcast in our games, because that's how most people see the world . . . You're not delivering what people would actually see; you're delivering what people think they should see [54]

This is the method by which the developer produces a commodity that he perceives the consumer wants to see. Production driven by consumption, not the representation of what an unmediated world offers, or even what is perceived a videogame world should offer, but what television offers. At an elementary level this is the conclusion of Baudrillard's third order simulacra of simulation where the 'impact of the medium is form' [1] and, as Lash and Urry accentuate, television is not considered a 'reality, but through choice of subject matter, editing and so on – a *model*' [46]. Therefore, through lifestyles, consumers mirror, or at least reflect, what is being modelled for them, existing in the ethereal vanishing point between what is real and hyperreal.

This model can be applied to the history of videogame production and its subsequent relationship to consumption. Just as early production processes had a direct link (albeit through code) to the eventual produced commodity, so too the consumer engaged with uniquely videogame experiences; highly abstract, they were typical of McLuhan's 'cold media' [49] where the player places their own perception of reality upon games. This could take the form of a player-provided commentary to a cartoonish, top-down football game of *Kick-Off* (1989) or players on *Sprint 2* (1976) imagining they were taking part in the Indy 500. Compare this with current videogames where the relucent image provides gamers with a 'hot media' [49] of broadcast quality. In game views are in-car and track-side in *Project Gotham Racing 3* (2005), and *FIFA '07* (2006) pans around the stadium at kick-off before settling into a grandstand view of the game. This is implosion in and between media '[t]he absorption of every differential system of meaning'[3] where pretension is abandoned in dereference to simulation. The videogame has shifted from the primeval production of bedroom coding, to the first order simulation of programs in magazines and counterfeit copies (warez) to the second order of distribution of mass produced games to obeisance to the third order of simulatory media in just twenty years. This sea-change is partly due to the technology which drives it to ever increasing sophistry, but also to the changes in production which Baudrillard, in homage to Marx says, is a 'reproductive consumption' [4]. As the producer at

[2] The empirical data presented in this paper is a result of interviews with three producers, two programmers, four artists and one technical lead carried out between August 2006 and December 2006. Four interviews were carried out at the developers business address, three at the Leipzig Game Show, Germany, and three at Game City in Nottingham, UK. The respondents were from four different countries (US [2], UK [5], Germany [2], Norway [1]). Names of respondents and companies are anonymous.

Lapsed Pacifist told said, 'through market research and focus groups developers find out what is needed . . . consumers ultimately make up the developers mind about the product' [48]. This is crystallisation of the 'referendum mode' [5] a switch or 'screen' [65] that determines consumption as a function of production, a centrifugal inversion of Fordist values, meaning that '[t]he entire sphere of production . . . must be conceived of as collapsing into the sphere of consumption . . . a general lifestyle' [6] we are what we eat then, products of our consumption.

Lifestyles determined by the implosion of the double helix of consumption and production are worthy of further examination. When videogames were purely videogames and not simulations of other media, their iconography was visceral, crude and relied on sharp contrasts and images to portray their message. Narrative played little part in the abstraction of *Pac-Man* (1980) or *Space Invaders*, yet they have the most enduring tales to tell. *Pac-Man* himself exists in a double helix, situated between East and West. With his design simultaneously inspired by the Japanese symbol for 'mouth' [44] and a pizza with a slice taken out of it [41] he becomes a metaphor for life in advanced capitalist societies, riven and driven by the spirit of accumulation, as Poole brilliantly spotlights

> He is the pure consumer. With his obsessively gaping maw, he clearly only wants one thing: to feel whole, at peace with himself. He perhaps surmises that if he eats enough, in other words buys enough industrially produced goods – he will attain . . . perfect roundness. But it can never happen. [52]

A certain sadness reigns in this depiction of *Pac-Man*. Doomed to a life of repetition, he constantly chomps at the same number of dots in the same one-screen maze, while chased by ghosts who only relent when *Pac-Man* eats a stimulatory 'power-pill' temporarily turning the haunter into the haunted. Homogeneity and duplication is a key aspect to how we situate ourselves, from the windows of the internet to the wi-fi seating arrangement at Starbucks, the 'new means of consumption seeks to replicate the same setting from one geographic location to another' [61]. With *Pac-Man* the pre-eminent consumer he is – along with George A. Romero's zombies in *Night of the Living Dead* (1978) - an icon of materialism, unable to escape from the shopping mall, where time is blurred and space loops back on itself, each exit becoming an entrance, ensconcing him in the hell of the same. The only alteration to his relationship with the means of consumption occurs when he moves outside of the sheltered system and into the black market to ingest narcotics, in order that he consume *yet more*. On the surface, this appears darkly humourous, but the message is striking: although consumers are aware of their complicity in this spectacle of the absurd '[T]he masses simulate the media which in turn hypersimulate the masses', they 'thrive on its 'fascination'' [47] they also demonstrate that implosion is total and not limited to the economic sphere of production and consumption. The 'dreamlike state' [62] that makes us zombies and *Pac-Men* in the shopping mall reaches its apotheosis in *Dead Rising* (2006) where the gamer races against time to defeat the zombie menace. The game concludes at the beginning of another business day with the realisation that there is no escape from the Willamette shopping mall. Condemned to survival mode, the avatar slowly dies, rotting away in the 20th century's bastion of consumption.

STRUCTURE OF PRODUCTION

Any project which focuses on the creation and artistic use of high technology excites investors, producers and consumers alike. As we have seen, this encompasses the supple approach to software development epitomised by the UK to the work smarter, not harder ethos of Atari. This is not limited merely to the production and consumption of software, but also the platform they are played upon. Arcade manufacturers such as Irem and Sega would constantly compete to out-engineer each others hardware, engendering such classics as *R-Type* (1987) and *OutRun* (1986) respectively. Mattel, the world's largest toy manufacturer, placed their Intellivision toe-to-toe with Atari's VCS hegemon in 1980 [42]. These original skirmishes gave rise to the term 'console wars' where two or more home-based platforms of the same generation are released within eighteen months of each other to compete in the consumer marketplace. Silicon technology has a limited shelf-life, so, with each generation lasting around five years the battle for superiority is intense. Arguably, the UK is the rarefied home of console wars, with the battle between the Spectrum and Commodore 64 as it's embodiment. Pre-figuring the implosion of synergistic media, each platform had it's own dedicated 'single format' magazine. The most popular were *CRASH* (Spectrum) and it's sister magazine *Zzap!64* (Commodore 64) both of which were published by Newsfield. Existing magazines such as *Edge* have a higher age demographic and therefore assume their readership has easier access to disposable income. It remains one of the few print media able to thrive in a market that is irrevocably linked to the rise of the internet. [23].

In the world of the contemporary videogame, it is as important to see distribution of electronic and print media as much a part of the economic culture as those of production and consumption, acting as the media which synthesises the two so they become indistinguishable. Where third party software manufacturers license brands

such as FIFA, the National Hockey League, and the National Basketball Association, to guarantee shelf space with retailers, platform manufacturers assure themselves of space in newsagents and supermarkets, via licensing magazines. Larger interests such as WH Smith's and Asda stock goods side by side, so a consumer can buy a game, a magazine and a tube of Pringles in one visit, which, due to immense economies of scale and downward pressure on suppliers, are available at vast reductions. Again, we see the prescience of Baudrillard, in his description of the drugstore as the 'synthesis of consumer activities' where the 'centralization of the products leaves less margin for ludic exploration . . . imposing a utilitarian path on the consumer.' [8] The structure of videogames can also help to illustrate this increase in 'profusion and calculation' [8]. Videogame critic Jesper Juul describes *Pong* as having a 'high possibility space' [33] where each game is unique. As the earlier examples of Pac-Man and the shopping mall demonstrate, consumers increasingly find themselves in homogenised spaces with little possibility and opportunity for uniqueness. They may be conscious and complicit in these actions, flaming internet forums with their desperation to play the next instalment of *Halo* and then discarding it once it has been played through to the end, but videogame developers find their possibility space limited before they start production. They are actively constrained by public relations departments which pursue space in magazines and on shelves

> design documents are worked out by the marketing department, who tell you 'we want this in the game, we want that in the game', and effectively as an artist or programmer you do as your told because they say 'we know what people want' [66]

Evidently, the production of videogames is not an artistically creative process, it is determined by external forces of consumption, market testing (referendum) and distribution

> we'll finish a product and if we send it to a certain magazine we'll have to change it before it goes there because they need to know exactly what they're playing within ten minutes otherwise it'll just be rubbished. When you've invested that amount of time and money, your *life* in making a game you can't afford to have that. You can't have bad reviews. [48]

As the above shows, videogame development in the 21st century is ends orientated, buoyed by demand for easily identifiable products, rather than by what is possible with the technology available, 'that's why I'm working on the 5th sequel to a rally game, the 6th to a football sim and another two sequels simultaneously. Nothing original in the pipeline either' [53]. This is a common complaint from gamers - and developers – all over the world with MM saying that the saturation of content over play in the industry is 'lethal' [50] Yet for an industry that was founded on an unwritten rule of individuality of imagination before licensing, the abundance of sequels compares unfavourably with competing industries such as Hollywood where there are conventionally three films in a franchise's cycle. The reasons for this are not always furtive. A videogame development team generally has a higher skill set than on a film, where catering, set design and construction, production, casting and editing are separate, contracted-out entities. On the other hand, a game is a typically holistic process from inception to completion, although this is changing as production costs are lower in other areas of the world 'in Thailand, India they get things done on the cheap. We had to compete against those studios over there'. This has not yet reached the point where contracting out is a viable, option 'then they [the publishers] realised it was cheap because they can't do the same work [as in the UK] and got burnt'. [66]

Although conventional film-making techniques require that director, actors and film crews are in the same location, the same does not apply to videogames; as long as a country's infrastructure supports telecommunications such as broadband internet and has access to platform development kits, perceptions of time/space compression mean that videogame development is increasingly global. A producer at the Leipzig game show wearily said that he was working in three different time zones simultaneously:

> I'm here in Europe giving this presentation, but when the day is finished in Europe I need to communicate with my dev teams in San Fran, when they finish their day I've got to talk to localisation in Tokyo. That's three working days in 24 hours. I'm the boss and I have to fit around them! [68]

The product he was engaged with required input from all over the world as the narrative and plot required translating into a multitude of languages. While enduring the vagaries of the last six months of development where 'if someone tells you it'll take three days they need nine' [68], sixteen hour days, seven-day weeks are not uncommon. Firms with global appeal such as Lapsed Pacifist and Sanctioned Parts List demonstrate how little labour structures have altered since the zenith of Atari. Extended periods of time toiling on a game were a source of contention among the development teams I spoke to 'typically the biggest issues are the long hours' [54] but for others, the long hours is part of the culture of coding and a badge of honour, with one developer embarking on a 'Jack Bauer challenge' in an attempt to program a game in 24 hours [18]. Again, simulation and implosion of

media is evident with the overt reference to a television series, but the inclination remains distinctly in the annals of the UK videogames industry; reviving the bedroom coding cult of nocturnal hyperactivity espoused by Matthew Smith on *Manic Miner* in the 1980's.

In spite of the increasing global penetration of videogames and the immateriality connected with production and consumption, physical location appears to be important to the structuring of game development. Warwickshire is an especial hothouse for development. Good communications to the two urban agglomerations of London and the West Midlands are part of the consideration, but it is chiefly because Codemasters and Rare, two of the UK's leading developers/publishers are situated in the area and this attracts artists, coders and producers so valued by the business. This has a halo effect for the domestic industry, with spin-off companies such as Stickman Studios, Sega Racing and Bigbig populating the area, and also for global interests. With UK developers being 'well respected abroad hence the ease of relocating' [66] the consequence is that a transfer to the US is appealing when 'in the States as a developer you can earn $85,000, over here you've got £29 - £30K which is as almost as far as you can go'. [30] What is striking about videogame production is that there is no pre-ordained formula, just a workstation and an internet connection. From a hotel room enabling TW to link with different facets of Sanctioned Parts List in Germany, to the swish HQ of Demented But Determined in the UK Midlands to Funny it Worked Last Time Studios in a rented flat, there was less homogeneity in the spaces of production than the products themselves. In this sense the industry is defined by flexibility and one wonders why it models itself on the old secondary industries of the past such as the steel industry in Sheffield and plant manufacturing in the Black Country in having a definitive place for production. With neither raw material or surplus labour power as large a consideration, perhaps one developer has the answer

> Internet play has given opportunity [sic] to interact and converse with people anywhere in the world . . . but however nice the taverns in *Oblivion* (2006) look for example, it's no substitute for the local where I can meet real people . . . I don't think traditions have been replaced [66]

Yet, as we have seen the changes in modes of consumption and production are evident and rigorous.

FUTURE OF PRODUCTION

What happens if the media and shelf space the industry vies for becomes endangered? As Ritzer says 'The consumer can no longer locate the site of consumption in physical space' [59] (Ritzer, 2001: 146) and videogames, as code and as product, are forging an increased ethereality in their future distribution. As we have seen, gaming has pioneered user-generated content. There can be no doubt that this is the future of electronic entertainment; downloadable music for MP3/4 players, football highlights on mobile phones: immateriality is the future means of consumption and hence of production. This shift effects all areas, from internet shopping to peer to peer sharing of feature films. *Defcon* (2006) is but one example of a game that is fully downloadable via the internet and doesn't require a visit to a games shop to buy, or even a disk to run: totally immaterial games consumption. LB concurs, 'online distribution is the future, there's no need for space at retail' [48]. As consumption alters its structure, so production follows suit, Microsoft's XNA is the first in a series of development kits that are available to gamers at home to produce their Xbox games on. The very best will be commercially available on Xbox Live Arcade but others will be distributed for free, which is envisaged to lead a revival in smaller games, reflected in their price and wider availability.

> MS [Microsoft] are saying they want really small indie games to be like YouTube where people will spend three or four days making a tiny game. . . then you've got Nintendo distributing dev kits for £1500, which is almost hobby territory, especially if you can make money from it [30]

Microsoft have been widely lauded by consumers and producers alike for the return to accessible coding and design techniques, particularly for a platform as advanced as the Xbox 360. This is corporatisation of bedroom coding, albeit in a new guise, somewhat different to the 1980's phenomenon founded on principles of individuality and zeal, where consumption was secondary to the networks of distribution and relationships of production. In effect corporatisation causes a 'McDonaldization' [63] where the consumer takes all, including means of production. Chipsets, hardware and consoles will continue to sell but the software on them will be pure code. With no physical embodiment, prices will be lower and, being user generated will take much of the production away from current codeshops, displacing current modes of production and consumption. It is hard to see how the traditional areas of materialism such as town centres and shopping malls, will not be affected by this. Consumers need to try on clothes before purchase, and may even prefer a tactile relationship with the fruit and vegetables they buy, but code is intangible and if the easiest way to procure it is by a download, or even by programming oneself, then Game, with 500 stores throughout Europe is likely to be economically distressed by this. As the print media for videogames is discovering,

a high tech industry requires a fast media. It is not beneficial to read about an event in a different time-zone six weeks after the fact, or have to travel to town to purchase the latest *Grand Theft Auto*.

This loss of relation with physical places is supplanted by an increased importance on the abstract value of videogaming, not only through immateriality, but cultural status. FJ hopes that 'the greatest videogame is not *Hamlet* but something really game orientated. We need to make the media as diverse as film from books and books from life.' [22] Unfortunately, this canonical space appears unattainable. There is little opportunity for a Shakespearean masterwork because the medium changes at least twice a decade. Words remain in books, films are easily viewed on television, DVD and at the cinema, while music is the most transpositional of media, on the air, in the wires and on people's lips, a transportability games can never hope to match as they are so technologically determinant. Exalted in the period leading to release and exhausted post-release, they are reminiscent of the fashion industry, 'fashion is never actual . . . the forms of fashion are ephemeral' [7]. In many ways the videogame industry is in a worse position than its fashion equivalent as clothes can still be worn even as a pretence at a fancy dress party. Yet the pixel-perfect conversion of *OutRun* to a home emulator, is exactly that: a simulation of the game, but not the time or the place. With no crowd to wow, no coins to exchange, no age restrictions to avoid, there is no time for foreplay or seduction in consumption of videogame culture as videogame history exists on a platform that is incompatible with the present.

These are indications of wider change. Coin-op *OutRun* required the gamers' presence in a physical space, emulation circumvents this and exists purely as a piece of code, the game is not 'immaterial' in Ritzer's sense, but *displaced* and displacement is the society into which we are moving. Wi-fi in public houses shows that networks are not forged over drinks, but how far away the user can be whilst physically inhabiting the one same space. IPods block out our inner narrative with all environments, urban or rural. Nintendo DS's portray the image that we are enjoying our journey to work because time is seen as education in *Dr. Kawashima's Brain Training: How Old Is Your Brain?* (2005) and not a commute determined by timetables. As Stiegler writes '[o]ur epoch does not love itself. And a world which does not love itself is a world which does not believe in the world' [65]. Yet production carries on regardless, more is consumed and boundaries of space, play and place are transformed. The immaterial *Defcon* has a 'boss key' to prevent being caught with a hot ICBM site at a workstation. Displacement. Leisure at/with work, consumption simulating as production. Perhaps more than any other medium on the planet, videogames allow that displacement process to take place because through the videogame we have a world, that via the meshing of consumption and production, we have built by ourselves, for ourselves.

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