**Digital Cultures Research Centre**
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## On-Line Papers – Copyright

# Technicity: Power and Difference in Game Cultures

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**Abstract:**

As technologies of communication and creativity become more deeply embedded into the fabric of our every day lives understanding subjectivity becomes a matter of understanding people's individual relation to technics as much as understanding geographies, class, race, gender, age or sexuality. The paper is based on two small scale ethnographies with game designers and players which have been generative of some critical insights in to the ways in which dominant forms of technology use emerge and are valorised as well as providing us with the means of identifying how these dominant styles are reworked and contested. These conclusions are contextualised by a review of some of the influential ways that the subject – technology relation has been theorised. We use these accounts in order to elaborate a particular notion of 'technicity' that enables us to more clearly identify the complex way in which power and difference are operative in the emerging participatory cultures of computer game production and consumption.

## Contexts: Play, Knowledge and Capital

This article evolves from the study of computer gaming conducted by the authors between 2001 – 2007. The key insight from this work has been the importance of understanding technicity as a variable, heterogenous and dynamic aspect of identity formation in contemporary techno cultures.

Our argument offers a critical perspective on the state discourse that stresses the conjunction of creativity, 'knowledge' and technology as the key to 21st century. competitive advantage. The original version of this paper was delivered at the *Game In Action* conference in Goteberg University sponsored by the Swedish 'Knowledge Foundation' who state ' In the emerging knowledge society, learning

is key', they 'aim to boost Sweden's competitiveness' by supporting academic industry research partnerships and by operating ' a school IT programme which aims primarily to inspire schools to develop new ways of working '. The UK Department of Media Culture and Sport report *Creative Britain – New Talents for the New Economy* states that the UK creative industries contributes 7.3 % of the national economy – the Prime Minister Gordon Brown writes in his introduction,

> 'Britain is a creative country. You can feel it every time you visit one of our great museums, galleries or theatres.You can see it when you watch the best of our television or play our imaginative new computer games.' (Feb 22 08 Department of Culture Media and Sport.)

This is a familiar enough strain of rhetoric; technology and creativity have been linked at the level of policy in the over developed countries of the west ever since it became clear that the engines of modernity could all be run more profitably in poor countries. (see eg Gore & Clinton *A Framework for Global Electronic Commerce* 1997)

These state positions are ideological in so far as they are driven as much by the technological imaginary as they are by economic evidence, however they nevertheless have material effects on all of us and these effects are felt most acutely in the field of education. ( see Lister et al 2003: 60 for technological imaginary). One clear-cut example of how these abstract 'intentions' get concretised is the amount of investment in educational games as a means through which to drive specific literacies.

The UK company 'Altered Learning' has for instance achieved some success in the educational games market with their mod of *Never Winter Nights* aimed at teaching basic literacy and numeracy skills to older teenagers in vocational learning environments:-

> '…*Never Winter Nights* represents a new approach to learning. Learners who feel threatened by institutions and conventional methods are encouraged to develop in a comfortable environment

> which is especially beneficial to disaffected learners. Many students have found the environment stimulating and enjoyable….The environment is designed to encourage learners to complete work by stimulating their desire to achieve. Many learners lack the motivation to complete conventional paper based assignments to evidence qualifications …but do enjoy playing computer games. NwN focuses the energies of learners on achieving their goals by making learning exciting and interactive. (from http://www.alteredlearning.com/ 16.04.07)'

Here notions of conventional literacy and a kind of techno media literacy are conflated in a way that directly relates to the centrality of our idea of technicity. Here are *particular* kinds of young people with *particular* histories of institutional and cultural disaffection being taught on the basis of their *particular* kind of technicity. The interest and enthusiasm generated within the serious games and games for education movements is clearly predicated on the, by now widespread, notion that the computer game is the training ground for digital literacy and by extension for citizenship in the information society, Kline et al observe sceptically ( 2003:55):

> '..the video game medium is the message, interactively inculcating the skills, rhythms, speeds, and textures of the computerized environment; cultivating digital aptitudes; squeezing out or devaluing other non electronic capabilities ; socializing players as subjects of and for a high-technology society; building cyborg identities of human/machine identity as gaming pleasure drives successively more sophisticated levels of virtual experience …'

In turn this framing of the computer game can be understood as mobilising one of Brian Sutton Smith's 'rhetorics of play' in particular his definitions of play as progress, in which play is identified primarily as a means of development, through which children socialise and achieve moral, social and cognitive development.

These understandings of games exist within particular historic and economic contexts which should give us pause to think about who is being educated , what kinds of subjectivities are privileged and preferred in this process and what kinds

are left out. Education for citizenship might be different from education for consumerism.

It is not only the state that promotes the idea of competitive advantage through techno creativity. We are currently on the cusp of another dot.com boom in which the persuasive technophilic enthusiasm for the idea of Web 2.00 and virtual worlds is driving great waves of corporate investment. This is Bill Gates in March of 2007 at the Microsoft CEOs conference

> 'In 1997, the theme of CEO Summit was "Corporate Transformation for Friction Free Capitalism." Today, in a world where we have access to virtually unlimited information at our fingertips, global supply chains, international markets that operate 24 hours a day and communication tools that enable us to move data around the world instantly have brought us a lot closer to a world of friction free-capitalism than many people thought possible back then.'

The idea of the Friction Free world derives from Ted Lewis' 1997 book *The Friction Free Economy.* The whole idea of the friction free economy is that somehow digital rationalization replaces Newtonian physics and Keynsian economics with the seamless mathematical abstraction of chaos theory. The shiny promise of Web 2.0 (O'Reilly 2004) is once again conjuring a friction free future. Operations like WikiPedia, MySpace, Flickr, YouTube, Technorati, and Digg are the poster stars for the new media era of user generated content when we will *all* be enjoined to be creatives in order to have a voice, a place and space in the new knowledge based digital economies. Web 2.0 is defined by co-creativity and the idea of an equivalence or mutuality in the power relationship in the generative process that allegedly erases the old divisions between 'producers' and 'consumers'. The following remarks from Web 2.0 gurus indicate how far technology is expected to embed itself into daily experience as expressive practice; Wikipedia founder Jimmy Wales' forecasts 'Its going to be a part of everyday life – creating and sharing media will be a thing that normal people will do all the time, every day, and it doesn't seem strange.' Matt Mullenweg of blog engine WordPress observes 'Now you see people *with no*

*technical ability* creating really amazing sites reaching audiences they would never have imagined reaching.' (our italics) Caterina Fake and Stewart Butterfield of photo share site Flickr emphasise the same combination of expression and universality. 'Whats changed is expanding on that theme of communication and personal publishing and making it available to millions of people *who don't have technical skills.*' (all from Lanchester 2006)

Here the technology becomes invisible in the new era of technologically mediated self-expression. Content will be delivered by us , by 'people who don't have technical skills,' 'by people with  no technical ability'. As usual technophilia strives to make techniques, technologies and interfaces invisible, that is to say the actual flesh / computer interface is somehow becomes a transparent two way membrane rather than an experience structured discursively.

We would argue that differential systems of power are not effaced but are frequently re inscribed in the configurative processes of software development, the processes of content production *and* through conditions of access to technology. The route we take as individual subjects to the digital economy will produce different kinds of technologically mediated identities, the conditions of access will themselves be generative. For us precisely these identities need to be understood not in terms of a failure to conform to some invisible but normative model of the technologically literate producer /consumer but more importantly as offering us ways to understand difference and diversity.

Our project here is to re insert the grains of friction producing sand into the picture – we want to argue that the development of the idea of technicity is crucial to the field because it makes it possible for us to reintroduce embodied individual subjects into the debate, and crucially to talk precisely about the messy obdurate *granularity* of power relations that the friction free technophiliacs elide.

It's the grain of sand in the oyster that produces the pearl.

**What is Technicity?**

The relationship between technology and modernity has been a continuing thread within critical theory ever since Marx. This assumed connection between human subjectivity and our use of technology has come into even sharper focus as the machinery of computing has been woven ever more closely into the fabric of our daily lives. For cyberculture critics, the processes of digitalisation and developments in biotechnology have intensified our relationships with technology – or at minimum made much more visible our increasing reliance of technologies of communication and mediation. Stiegler (see below) and others describe our contemporary moment as one of accelerated evolution – that technological change is occurring more swiftly than in previous eras producing correlative changes in our lived practices and inevitably our subjectivities – ie what it means to be human changes apace with our technologies. In the process we have once again been forced to attend to the cultural framing of technology as part of our subjectivities as well as to questions of national, local and individual identities. What is apparent is that this period of technological 'evolution' and 'revolution' whilst frequently couched in language that seeks to render our everyday technologies as invisible or transparent, actually makes our technologies more urgently visible.

The significant aspect of our use of the term 'technicity' is to encapsulate, the connections between an identity based on certain types of attitude, practices, preferences, and the importance of technology as a critical aspect of the construction of that identity. Technicity also allows us to see the ways in which shared tastes, practices and aptitudes produce collective identities, group belonging or outsider identities amongst those who do not share the same tastes. In the context of the techno cultural economy and understand technicity as an aspect of identity offers an important critical handhold. It is clear that a valorised notion of technical virtuosity, of a particular easy adoption of and facility with

technology, is a fundamental aspect of an idealised contemporary subject. We want to insist that this historical moment produces technological competence as a key marker for success as a participant in contemporary culture, perhaps as a citizen, but more significantly as the right kind of consumer.

At an abstract level we are interested in the inherent, co-constitutive relation between the human and their technical supports, agents, supplements (never simply their "objects") that is to say that we are specifically interested in the ways in which human subjectivity is shaped by and lived through specific technological forms. At the level of the everyday studying technicity seeks to sustain critical attention on the processes through which the human, as an always social, connected individual—connected through techniques, technologies and dynamic traditions of practice— lives a particular existence. Living here is understood as essentially a process of becoming, this is a view of subjectivity that challenges the notions of a fixed or stable identity by starting from the idea of an always relational and always situated self. This is a view of the subject informed by the work of theorists such as Haraway, Braidotti and Hayles who bring a feminist sensibility to the theorization of the centrality of prostheses, techniques and technologies in the generative processes of these 'becomings'. This focus on technicity allows us to keep the issue of individual and collective identities in play as we consider how particular technicities are harnessed to the production and reproduction of consumer culture.

**TOMB RAIDING – ARCHEOLOGIES of TECHNICITY**

Many of these ideas or 'forms of attention' are not new. In this section we propose our particular archeology of the field. This excavation will show how discourses of technicity have been present as a major tradition of western philosophy. It will also demonstrate the way we draw on particular interpretations of those traditions in ways that inflect our own work.

*Neo Frankfurt School Sociology of Technology*

A selective reading of the Frankfurt School's focus on power in our relations with technologies surfaces in a useful work done more recently on the sociology of technology. There are two aspects of this tradition that seem relevant here. The first is that strand of critical theory which argues that mathematical abstraction underpins the social practice of Taylorist rationalization and must therefore be oppressive to the workers in mass production. . The second is the emphasis on the ways in which the Frankfurt School understanding of technology is formulated within the terms of industrialization and modernity. This is counter intuitive in so far as we might assume that the friction free worlds of the digital economy are 'post industrial' - however our selective interpretation of the Frankfurt School indicates a way of understanding digital cultures that has the same force, the same power as their constructions of technology in processes of industrialization. In this interpretation the digital is neither post industrial, nor post modern, but can be read as a reinscription of modernist dreams of domination, power and the dissolution of the human/machine distinction. (Marcuse 2002:151-2) Here then digital technologies are hardly the gateway to a progressive post humanism but merely a reinscription of a reactionary 'superhumanism' in which systems thinking and surveillance become ways of exercising the social control of everyday life.

Early origins of this line of thought can be found in Husserls' work on the effects of the development of algebra in mathematics that, he argued, had the effect of transforming matter via geometry into pure calculation. This philosophical move makes possible the age of the technical, makes possible modern science that in turn produces technological development. However underlying it all is a form of reason dominated by abstract calculation as a means first of all for the domination of nature but, by later Marxist interpretation, for the domination of men and women. Sherry Turkle points out how ideas like this surface in the work of Joseph Weizenbaum the creator of Eliza the first AI programme who analysed

dominant paradigms of engineering thought in terms of the genocidal efficiency of the holocaust. (Turkle 105 – 8 Joseph Weizenbaum 'Computer Power and Human Reason: From Judgement to Calculation' WH Freeman San Farancisco 1976).

In *One Dimensional Man* (Routledge 1964) Marcuse argues that technological rationalism is the dominant paradigm of modernism excluding all other value systems, 'In the construction of the technological reality there is no such thing as a purely rational scientific order: the process of technological rationality is a political process.' (Marcuse, 2002:172)

His work points to the bridge between industrial and digital media capitalism that is crossed by Habermas and firmly secured by writers like Douglas Kellner, in for instance his description of *technocapitalism* (ref 1989):

> ' a configuration of capitalist society in which technical and scientific knowledge, computerization, automation of labour and intelligent technology play a role in the process of production analogous to the function of human labour power and the mechanization of the labour process in an early era of capitalism.' (2005)

Andrew Feenberg (1991) combines the sociology of technology by writers like David Noble with the Frankfurt School critical theory tradition through the development of the idea of 'technological hegemony' that shares a great deal in common with the notion of 'dominant technicities' that emerged from our own empirical observations. For Feenberg 'technological hegemony' develops through the ways in which political, economic and cultural power is reflected in the technologies produced in a given society. In Feenberg's analysis this hegemony is a matter of certain kinds of technologies becoming naturalized as we internalize what seems like the common sense or obvious nature of a particular technological application. However he argues that these applications are in fact only one possible outcome from the potential of technologies in development. Such outcomes become hegemonic when they are produced through the inter-relations of three discursive forces; power in society;

technological instrumentality in the realm of science; and technological rationality in the context of capitalism.

Feenberg's account of secondary instrumentalism comes close to our general understanding of the utility of technicity when he talks about the ways in which techne can define identity – to work with wood is to be a carpenter (1999:200). However, importantly, technologically mediated identity formation also carries with it the possibility of tactical resistance and creative subversion – eg in the workplace workers create a whole new market for viral communications whilst hackers and artists constantly find non-hegemonic applications for digital tools.

Graeme Kirkpatrick's 2004 book *Critical Technology* is based in a critique of Feenberg; Kirkpatrick argues that the 'the more adept technology users will find that, in the informational society, they are also the people with the resources that they need to participate effectively as citizens.' (2004:47) The major thrust of his argument is developed on the basis of this appeal to digital citizenship – he argues that computing technologies need to be designed to make it possible for as many people as possible to become adept. Building on Sherry Turkle's idea of a 'computational aesthetics' he argues for an inclusive 'computational temperament' that would recognise the necessity or all citizens to be able to use computers that are transparent open source machines, not closed systems made opaque by easy to use GUIs and consumer surveillance network systems. Kirkpatrick's call for 'computational temperaments' that maximize inclusivity is clearly very close to our own work in its insistence on an understanding of a technicity that is based on difference not on the homogeneity that a cost efficient Taylorist computational temperament might afford.

**Ethnography Identity and HCI**

Our work is also informed by the ethnographic work with computer users undertaken in the study of Computer Mediated Communications. This tradition

has developed a nuanced set of understandings of the role of computers in doing identity work. Here for instance we draw upon Sherry Turkle's work; in *Life on the Screen* Turkle emphasizes the *personal* aspect of the personal computer, drawing our attention to the importance of recognizing the different ways that we use computers, 'individuals want to deal with technology that makes them feel comfortable, ' (1995:41), they 'construct their computers as projections of themselves' (1995:41), people are trying to 'express their cognitive styles' in their choice of OS system. This focus on diverse subjects leads into a restatement of ideas about individual learning styles borrowed from education, 'the pluralism of the computer and its many uses makes the machine … a precious resource for learning and self development because people tend to learn best when they learn in their own style. ' (1995:46) However for Turkle this happy state of affairs is not inevitable or uncontested – she offers an account of the development of computing in the 70s and 80s as a conflict between hard and soft mastery; '[w]here my professor saw the necessary hegemony of a single current style I found a range of effective yet diverse styles among the novices and experts' (1995:51).

This notion of style is appropriate for our consideration of technicity as it allows for localized and individual articulations of taste and technique and suggests an expressive dimension (an outward oriented aspect to our engagements with technology that communicates aspects of our identity).

'There were boys and girls, men and women, novices and experts who reported they had changed their styles to suit the fashion when they started to interact with the 'official' computer world. …The cost of such wrist slapping was high. On an individual level, talent was wasted, self –image eroded. On the social level the computer culture was narrowed..' (1995:54). Turkle's example here is illustrative– a preferred use designed in to the interface as well as an internalization of this preference on the part of the user produces a predominance of a single 'style' that *actively* excludes different styles.

Turkle sees glimmers of hope however, where Kirkpatrick (2004) sees the Graphic User Interface instantiating a closed system, Turkle argued that the introduction of GUI machines and easier to use expressive software made computing more amenable to different identity formations. The 'emerging culture of simulation' she argues makes 'room for people with a wider range of cognitive and emotional styles. In particular women have come to feel that computers are more culturally acceptable' (1995:56). Turkle's optimism is useful in this context. New interface designs certainly contribute to shifting cultures of 'computational temperament' and engagement – witness the effect of the Wii controller in instantly widening participation in gaming. At this level widening market share ( as Nintendo have brilliantly shown) can also address diversity and inclusivity.

**Post Humanism**

Finally these twin strands of a critical reading of technologies combined with an understanding of their role in identity formation are contextualized by those contemporary considerations of our relations with machines that have cast technology with a lead role in the history of Western metaphysics. The contested and variegated field of post humanist theory is one outcome of these theorisations in which the self is understood as having a configurative relationship with our 'inorganic exensions'. The notion of configuration itself derives from Actor Network Theory, itself a way to begin to reconceptualise the place of the human subject within the networks of things that constitute our eco system. The roots of the idea of an ecosystem are to be found in the works of Gregory Bateson in the idea of the three ecologies that finds its way into Deleuze. Bateson himself was influenced by Weiner's cybernetics, the tradition that spawned Haraway's 'illegitimate offspring'. Weiner's ideas presented themselves as the dialectic alternate to the Marxist and Modernist concepts of the man machine interface by postulating a continuity between us, an

intersubjectivity as it were, that replaced the modernist image of man acting on machine or machine acting upon man with the idea of permanent feedback. The modernist traditions through Engels, Marx, the Futurists and Charlie Chaplin had all made commonplace the idea that our relationships with the technological and economic application of science created new modes of subjectivity.

The point of this archeological sketch is that the current moment makes a focus on our technological relations unavoidable, irresistible and implacable in their insistence. The contemporary interpenetration of technics into human communicative spaces prompts a profound reconsideration of human subjectivity. According to Steigler (1998:4) for Heidegger ‘ the history of being is nothing but its inscription in technicity.’ Moreover his reading of Heidegger emphasises the generative nature of technics, or tekhne the Greek word defined by Aristotle as ‘ the bringing of something into being’ (Stiegler 1998:9). Heidegger wrote that tekhne ‘reveals whatever does not bring itself forth and does not yet lie there before us’ (Stiegler 1998:9) – it is as much a process of revelation as manufacture. Stiegler concludes the introduction to his book on Heidegger with ‘

‘There is today a conjunction between the question of technics and the question of time, one made evident by the speed of technical evolution, by the ruptures in temporalization … that this evolution provokes, and by the processes of deterritorialization accompanying it. It is a conjunction that calls for *a new consideration of technicity.* ‘ (Stiegler 1998:17 his ital. see also Crogan this volume for a more detailed examination of Stiegler’s usefulness in a consideration of time in relation to games)

For Stiegler this will involve a metaphysical understanding of our new kinships with what he calls ‘organized inorganic beings’. We also want to suggest that in the ‘post human’ era these kinships are clearly invested with all kinds of libidinal desires and the fears such desires engender. Writing about machines and technology in general Braidotti draws our attention to the disavowed ‘erotics’ of

our technicities and passionate investments in techne and techniques.-

> “Machines fulfil a fundamental libidinal structure, which mimes the workings of sexual energy. They question the boundary between the functional and the gratuitous, productivity and waste, moderation and excess. Machines make connections, cogs and spikes and tubes penetrate each other with fierce and mindless energy. From Eisenstein to Cronenberg the erotic power of the machine has not failed to impress film-makers, artists and activists. some of them have not hesitated to stress the theatricality of the machines, their pure, unproductive representation value as 'bachelor machines', that is to say pure objects of play and pleasure, utterly deprived of functionalism. …This gratuitousness is central to the erotic power of the machine." (2002:217)

Computer games are potentially the most ‘gratuitous’ of all uses of information / media technologies, central to a libidinal techno-economy that is disavowed every time we discuss educational games or make a claim for games as a site for the development of ‘valuable’ technological competence. The techno-erotics of the interface are sublimated in a discourse of ‘uses’ and the now familiar rhetoric of play as ‘progress’. As we have suggested already, ‘taste’ is a key element in our concept of technicity and any account of taste has to be attentive to issues of pleasure and affect – why and how are we drawn to particular techniques, stories or forms? For us, it may be that it is equally possible to rearticulate the disavowed techno-erotics as a means to make possible spaces of resistance. For instance, the passionate investments of fan producers might be understood as one site where differential expertise is generated and celebrated through a passionate engagement with the machine.

**Technicity in Operation**

> Situations Vacant:
> "We are always interested in learning about skilled game coders, animators, illustrators and Guitar Hero freaks (Pro-Evo would do too)…"
> www.powerfulrobot.com

Our histories as cultural studies researchers focuses our attention on developing ways of understanding the differentiated nature of production *and* consumption in

relation to lived technicities. Dissatisfied with dominant essentialised accounts of expertise and taste we have focussed on rereading the history of technoculture and its chosen heroic subjects. In our research what has been most evident is the dynamic operation of power and resistance in the production and articulation of both insider and 'outsider' identities. This dynamic process is writ large in the stories of 'lone' hackers who hit the mainstream, in the accounts of bedroom programmers who end up driving a Ferrari with a Playboy model on their arm. The dominant technoculture has its preferred subjects (and therefore its preferred technicities) and this in turn is productive of resistant or recalcitrant subjects who find other ways of playing and expressing themselves through technologies. These 'alternative' practices then become the resources for intervention and then innovation within the dominant milieu.

**Biographies of Technicity 1 : Magical Things of Wonderment**

Our analysis of the dominant technicities that operate within game production was prompted by the findings in our Pivotal Games case study, conducted in 2003 based on ten in depth interviews with a cross section of the studio's employees. (ref see Dovey & Kennedy 2006)The similarities that emerged in our case studies suggested a biographical evolution of a creative programmers' sensibility in their accounts of early encounters with computers and games. This sensibility is characterised by a fascination with how things work 'under the bonnet' so to speak, combined with a fascination with the creative possibilities of the computer as a manipulation machine. Both of these characteristics are linked to an interest and facility with mathematics. For several of our respondents the computer as game play entertainment quickly became the computer as creative tool as young boys began to explore beyond the boundaries of the software provided.

These common experiences of early games described by one our respondents as ' magical things of wonderment' opened up a field of technical and creative

expression that has become a key part of the professional identity of these game developers. Part of this shared nostalgia for early games is based not just on experiences of being a consumer of a new product but in the real possibilities that this consumption opened up for becoming a producer. These key figures were able to intervene in the processes of technological innovation and development by altering, extending and manipulating the technology in unexpected , playful and often illegitimate ways.

A second dominant narrative in the Pivotal developers' accounts of the evolution of their tastes was a common experience, particularly amongst senior members of the team, of fantasy role play 'table top' games such as Dungeons and Dragons which echo the remarks made about the star designers below. Mathematically calculated game mechanics based in sprawling rule books were perfectly adaptable to the algorithms of computer programs. Four of the ten respondents – significantly all senior figures within the company both in age and authority - expressed strong childhood and adolescent attachment to paper gaming, to the mathematically systematised pass-time of role play gaming, fantasy and Dungeons and Dragons. Table top role play games, pleasures in engineering or maths, a fascination with systems, these are all aspects of a particular taste culture and have a role to play in the formation of a particular *technicity*.[1] What is also clear is that early access to computers and to games clubs have had a significant role in fostering the skills that have become prevalent and valuable within the industry. Taken together these biographies suggest an essential set of propensities and tastes yet we want to suggest that these individuals are only securely ensconced within the industry because of the processes of access and inclusion that lead to companies always hiring 'people like us' who play 'games like us' as the quote from the 'Powerful Robot' job ad above so clearly illustrates.

[1] Kirkpatrick, G. (2007) has conducted research in to narratives of early computer use that has produced strikingly similar results.

**Biographies of Technicity 2 – Star Systems**

> 'We were all in it from a sense of wonder. All of us either had no lives before or had thrown them over because of these stupid machines. We may hang out together because we were all the same sort of jerks.' Doug Carlston – co founder of Broderbund software (King & Borland 2003: 47)

This primary evidence of a dominant technicity prompted us to look at secondary sources in the popular biographical literature of the emerging 'auteur stars' of the game industry. With the evidence from the production study above in mind we undertook an analysis of popular biographies of the star auteurs of the games industry, notably Ken Kutaragi of Sony Playstation, Sean Blackley the X Box developer , Carmack and Romero the *Doom* lead designers and Will Wright of *The Sims.*

These secondary accounts are themselves part of the discourse of the hacker mythos, the lone individual genius, breaking into hi tech equipment and repurposing it for pleasure and fun. Similarly cyborg discourse informs these accounts in the notions of early designers with machine like minds and inhuman propensities.

It is for instance a common place of these 'star' biographies to point to a childhood passion for games of all kinds and an early engagement with computer games specifically. 'Romero' for instance, 'was so good at Pac-Man that he could maneuver the round yellow character through a maze of fruit and dots with his eyes shut.' (Kushner, 2003: 5) An associated feature of game designers' backgrounds often brought to our attention is an interest in engineering - the construction of complex systems. As a teenager Blackley amused himself by building go carts and bombs (Takahashi 2002 : 39). Will Wright, lead designer of *Sim City* and *The Sims* , was encouraged by a chemical engineer father with projects that included building radio controlled models, 'Mostly I built a lot of models,...then I blew them up and built more.' (King & Borland 2003:82).

Many senior industry figures found their predispositions toward games and complex controllable systems were originally satisfied by paper and tabletop role play gaming usually in the form of the Dungeons and Dragons format. Dungeons and Dragons was foundational for Richard Garriot, the first iterations of his *Ultima* game were based on teenage D&D sessions, the 15 year old Richard Bartle was hooked on D&D and it fed directly into the terminology and design of his 'Multi User Dungeons', John Carmack is reported as hosting weekend D&D sessions with Romero his Doom co author at his Shreveport base around 1990. (King & Borland 2003 :96) The role of the games master in these sessions is crucial; narrator, director and judge in the unfolding story it is a role that clearly appeals to a sensibility in which creative leadership, a grasp of mathematical rule systems and a sense of dramaturgy all combine. This influential sub culture is also, it is argued, characterized by a preference for fantasy (usually defined as post – Tolkien) and science fiction literary and cinematic tastes. Daniel Pargman has noted that the Dungeons and Dragons connection has been made by wide numbers of commentators and argues that at the core of this subculture is an interest in 'imaginary worlds and that these appeal to persons who bear a fascination and a will to understand and master complex systems that are logical and controllable.' (Pargman: 2003 online).

There is also, in these accounts of the role of fantasy in the dominant technicity of the games industry the hint that this set of predispositions goes hand in hand with a certain level of obsessive, a-social or even anti social behaviour patterns is both cyborgian, and also typical of the hacker in his [sic] loner identity. Much is made by Kushner (2003) for instance of Carmack and Romero's misfit status. A psychologist examining Carmack following his attempt to steal an Apple computer makes the following observation of chillingly cyborgian tendencies, "Boy behaves like a walking brain with legs… no empathy for other human beings." (Kushner, 2003: 24) Carmack is described as having some 'strange' mannerisms : "He developed a unique speech impediment, adding a short

robotic humming sound to the end of his sentences, like a computer processing data: “12 times 12 equals 144.. mmm.” (Kushner, 2003:19) King and Borland allege that the *Doom* duo Carmack and Romero ‘found programming to be a refuge from unhappiness elsewhere in their lives.’ (2003:90) They further argue that Richard Bartle found a social space in the Computer Society at Essex University in 1978 because programmers were regarded as ‘social misfits’ by the predominantly radical left student body. Alongside these allusions to social ‘dis’ ease we find frequent references to the obsessive and driven qualities possessed by the ‘star’ programmers. One of his co workers commented on John Carmack, describing a classic cyberpunk console cowboy figure, ‘When he was programming there was nothing but programming, I’m sure there were days when he didn’t eat.’ (King & Borland 2003: 95).

There is finally a marked sense of sub cultural rebelliousness typical of the hacker in the constructions of these biographies, Romero and Carmack are both described as having an intolerance of ‘authority’, Carmack in particular is alleged to hate the authority of parents, school and religion (Kushner, 2003: 19). Both Asakura and Takahashi portray their subjects, respectively Ken Kutaragi at Sony and Sean Blackley at Microsoft, as spanners in the corporate works, not ‘company men’ , but rebels on a mission to establish games within the heart of the corporate body. Kushner describes Carmack as identifying very strongly with the hackers in Steven Levy’s book, it is this book that reassures Carmack that ‘he is not alone’. According to Kushner’s account the hacker ethos, which Carmack encounters here for the first time, becomes very important to him and he continually rejects all attempts to copyright his programs or innovations. (Kushner, 2003)

These accounts are formed through the discursive frameworks of the technological imaginary, conjuring the popular and the theoretical tropes and mythos of hacker and cyborg in their description of game culture stars. The strands in what we have identified as a ‘dominant technicity’ are deeply

gendered, offering a particular masculine identity a valuable cultural space in which to create imaginary, controllable worlds. This desire is met by the technical possibilities of the computer to create highly realized, controllable, rule based, imaginary worlds,

> '…in computer science you create the world. Within the confines of the computer, you're the creator. You get to ultimately control everything that happens. If you're good enough you can be God. (Torvalds and Diamond 2001:73 – 74 cited by Pargman 2003)

The evidence above suggests a consistency of taste, sensibility, aptitudes and propensities which we have defined as a 'dominant technicity'. However the question remains as to what we mean by 'dominant' in this context? Just that they are common tendencies shared by a lot of men who love computer technology? In what follows we want to stress two aspects of the operation of dominant technicity - first that dominance implies power. As we have argued above, dominance inevitably produces resistance, those who do not fit the hegemonic mould become differentiated and excluded as 'the other' - before being identified as the next new trend – as a new source of production and consumption in the entertainment and leisure industry's hunger for innovation. If a particular group is dominant then we can be sure that there are other stories, identities and creative processes that get written out of the discourse of dominance – we will explore these in some detail below in order to argue that 'technicities' are never fixed, never completely determined, but are contested and negotiated, technicities are a 'becoming' in themselves produced through our daily encounters with technology and our ever shifting tastes, desires, pleasures and competencies. Most technicities only become 'visible' as part of the mainstream when they are susceptible to market commodification. The issues of dominant or marginal tastes are here made more complex by the fact that these particular taste preferences heave generally been deemed marginal or subcultural in relation to a hierarchy of 'quality 'versus 'trash' tastes. The movement of games themselves from bedroom subculture to mainstream big media business has had the effect of repositioning the hacker / programmer from

margin to centre.

The emergence of a dominant strain of technicity within game production has not happened by accident – it has happened because this group does important work in the system of production of symbolic goods, cultural and economic capital. The vibrant virtual worlds which they create are in some ways the domain of the technological imaginary, the place where our desires are played out (and played at). The technological imaginary is a driver of consumption in conditions of never ending upgrade culture, the next gadget or software upgrade always bringing us ever closer to the sense of completion and wholeness which day to day reality so painfully lacks but which we are certain to find in the friction free world of the imaginary future.

**Technicity And Alterity.**

Access to the kind of experiences which enable the development, recognition, celebration and reproduction of these technicities remain mitigated by other social and cultural barriers. Any celebration of the role technology might play in the reconfiguration of axes of difference has to be attentive to how the 'digital divide' operates globally, how socialization and education play a part in directing particular groups away from an interest in science, technology or mathematics. There is a long history of interest in the ways in which these factors determine the construction of gender and racial difference in access to technological prowess. Alterity is alive and well in contemporary technoculture and alterity itself is productive of specific forms of technicity that find their expression in a heterogeneous range of tastes and practices. In what follows we look at just two of these whilst aware that you will each have your own examples that speak of counterhegemonic play forms, pleasures and subjectivities.

The first example is female *Quake* players[2], research focussing on these female '*Quake*' players as cultural *producers* serves to illustrate how intention to be both aspirant producer, fan, artist and tactical commentator all in fact overlap, informing one another in complex new discourses of critique and participation. Female Quake players have often deployed a sometimes contradictory feminist discourse in the articulation of their relationship to the game culture in general, on the one hand they have produced websites, webpages and formed clans through which to enunciate their outsider status through the naming of these clans and the imagery which inspires their skins. On the other hand they have clearly expressed a simultaneous desire for full integration and acceptance within the culture more generally. By foregrounding both their 'femaleness' and their skill in the game they offer a different set of meanings to computers, computer games, and challenge the naturalized assumptions about gameplaying technicity. By bringing their own bodies or their fantasied bodies to the arena they disrupt the assumption of a white male heterosexual player and avatar. They also problematise the dominant image of games playing as a masculine retreat from the 'feminised' body and make the body figure in this relationship with technology. The legacy of the early female *Quake* players lives on within current female gaming clans, particularly competitive all female clans. The problem they pose for the secure construction of the dominant technicity is nowhere rendered more clearly than in the hostile, sexist and frequently downright misogynistic response to female competitors whose abilities are challenged and whose presence is also dismissed as a mere 'marketing ploy' by the big games companies. Scratch the surface of any discussion list about female gamers and you will soon uncover a common discourse that condemns these players as outsiders who have 'misappropriated' the game space and who potentially undermine gameplaying expertise.

[2] *Quake* and its many sequels is a first person shooter game that is playable individually but also online either as an individual or as part of a 'clan'. The game quickly spawned a highly visible but very masculine online culture which also resulted in the development of a vociferous and frequently explicitly oppositional female playing community (see Kennedy 2005) .

Technical expertise can provide the means of exchange for an exclusive male domain of 'communitas'. Communities of expert consumers, hackers and modders are usually highly gendered. The oppositional force of the examples of these players derive precisely from the fact that female players have often been entirely excluded from the communities that form around practices of co-creativity (skinning, modding etc).

As well as challenging dominant notions around appropriate feminine behaviour, pleasures and competences, the female Q*uake* playing community has also provided the means and support through which to contest and critique sexist behaviour amongst players and discussion list contributors. In 1998 a 'green ribbon campaign' was launched in response to the harassment experienced by a British female player known in the community as Hellkitten. Images that she had posted on her website were hacked and altered to include pornographic imagery to the dismay of many within the community. The campaign involved displaying a modified (and green) version of the *Quake* logo on webpages and websites as a symbol of support for both the individual victim of this attack and as a request for tolerance and respect amongst players. The campaign served to raise awareness of the frequency of online harassment and its damaging consequences for players and for the community. The campaign was not accepted wholeheartedly by all of the community however, and it became a particular site of vociferous and visible contestation of dominant but unspoken ideas about gender and games. These moments of disagreement and debate however fleeting are important in challenging dominant discourses about gender and for the participants they are the hallmark of community as norms, prohibitions and sanctions emerge around particular behaviour. These are more 'visible' alternative player/producers whose presence marks their difference from dominant playing subjects and they bring into stark relief the playing subject as an embodied subject. The clan sites and individual webpages make frequent reference to a specifically female body as well as making use of highly sexualized imagery that plays with the erotic so consistently disavowed in

contemporary game cultures' emphasis on game play as agonistic.

This example also mirrors the complex outsider/insider relations so prevalent in the stories of the dominant producers. It undermines entirely the notion that technicities are essentially masculine or feminine whilst also highlighting the strength of the discursive construction and naturalization of these as specifically male.

**Lo-Tek Game Culture : 1UP Megazine**

Raina Lee is the producer and editor of a self-published 'megazine' entitled "1-UP" which contain cartoons, stories and essays based on a heterogeneous range of computer games and computer games pleasures. It also contains review essays of both current and classic game titles and offers critical commentary of games old and new, although the megazine displays some nostalgia for classic games and 'simpler' pleasures. As a second generation Chinese American with feminist sensibilities, Lee is positioned outside the 'normative' construction of the computer games player. Lee cites her motivation for producing this megazine: "I publish 1-Up to make sense of our relationship to technology as well as to chronicle the culture surrounding video games"(2002). The megazine is also clearly an intervention into the gaming culture and the discourse that surrounds it: "some brush off video games as mindless entertainment, there is little written about them as a cultural experience. Most of the material comes from game publications that are written in the voice of a 14-year old boy, which is ok if you are a 14-year old boy. Many of us are not, and have never been. Which is why we have this publication." (2002)

The articles included in the megazine offer feminist readings of games and also tackle the issue of race in game representation (an enduringly overlooked aspect of game culture). In one article Lee critiques a First-person shooter game distributed by Aryan record label Resistance Records a company owned by the "largest active Neo-Nazi organization in North America" (2003: 84).

> Like mainstream mediums such as film, television, and the Internet, gaming is an influential cultural outlet where values of hate and intolerance can be perpetuated. Like those mediums, gaming is also a form of communication where liberating, anti-racist, and feminist values can be spread, and better yet, experienced. For those who want to make a difference in the war against hate, I suggest they embrace the do-it-yourself ethic and hack *Ethnic Cleansing* back into a decent game. (Lee, 2003:85)

The megazine represents a range of responses to computer games from passionate engagement and enthusiastic articulation of playing pleasures, through to systematic critique. Lee's producerly activities along the margins of games culture are unlikely to find their way into the dominant stories of hard-core gamers and the 'hard core' producers. Yet as this quote below demonstrates Raina Lee herself shares a very similar set of tastes and aptitudes as those recounted in the popular biographies of these 'founding fathers':

> Video games introduced me to computers and other gadgets (walkmans, audio equipment etc) and even today I am kind of a gadget nerd. I don't mind figuring out VCR's or digital cameras or any other kinds of personal technology, and perhaps I got used to it because I spend so much time with games. My father was also into techie/ audio equipment, and he always encouraged me to take those interests. (personal correspondence 2004).

Lo-tek interventions such as sewing your own Atari handbag, making arcade cabinets out of graph paper are all a celebrated aspect of a sub-cultural or zine sensibility which operates between passionate engagement and outsider status. A sustained interest in the role that technicity and specific 'traditions of practice' play in individual and collective processes is key to understanding these stories and histories.

A final example that brings us to research very much on pleasures and consumption amongst young players that is perhaps suggestive of the ways in

which the issues we have raised here might be return us to the question of education as well as suggesting some more fertile avenues for research.

**Lord of the Rings**

This case study is based on observations and conversations made during a research workshop which we ran in February 2004 in which we compared the experiences of playing a *Lord of the Rings* board game, *a Lord of the Rings* computer game and watching a *Lord of the Rings* film. We recruited eight young people between the ages of 12 – 16 as our co investigators. Because we have also been interested in researching differently gendered game play we set up an all female and all male group. However Gender turned out to be the least important factor in gameplay pleasures and aptitudes - what was important was familiarity, expertise, as well as the important issue of playing with others who have a shared 'technicity'. Technicity also emerged us a useful clue into understanding the different pleasures discovered by our participants in their experience of intermedial storyworlds.

Thinking about the different 'technicities' of our players therefore becomes a way of understanding apparent inconsistencies. Sixteen-year-old SP for instance was in fact the most experienced computer game player amongst the girls group – this might explain her comment that playing the computer game in co-op mode was rather difficult when paired with a less experienced player.

> 'Sometimes it was a bit more of a hinder 'cause you needed to check where the other person was, how they were doing, and if they needed to get the life, they needed to go and get it, as oppose to working together to win successfully.'

On the other hand SP was in fact the only participant who had read the novel of 'Lord of the Rings', so her previous cultural exposure plus her computer game play experience might explain her experience of the computer game as just 'pure events that happen', or of the board game as ' just an outline of the characters

and locations but what they do is not based on the story so much'. She was also one of the few participants to offer us any detailed sense of engagement with the film as narrative experience, in response to a question abut which characters she cared about in her viewing and playing she replied,

> 'Aragon because he had both the physical side that he could get injured in battle or something, and at one point he did when he fell over the cliff, and also with Arwen because he obviously he really loves her, and her dad's trying to split them up. It's a very sad moment for me. I don't think I particularly cared about any character in the video game because you can always restart…'

In these comments from SP we can see a particular combination of taste (for fantasy literature) and technicity (as computer gamer) informing an 'expert' commentary on gameplay and story.

Similarly amongst the boys the social performance of play was mediated through particular kinds of taste and technicity producing particular kinds of expertise. JF for instance, through his gameplay, viewing and commentary, identified himself as an expert gamer with a very sophisticated grasp of rule sets and game strategies. Here he is discussing what he is thinking about in computer game play,

> 'Yeah you're also thinking about what you'd do in the later level compared to what you've managed to do now, so if you had low health and you're playing cooperative you'd think more about making the player with more health walk ahead and maybe protect you, and you talk about how to get across obstacles such as drawbridges and how you'd go about that with enemies around, would you try and make the drawbridge go down fighting the enemies or would you kill all the enemies first and then make the drawbridge go down.'

JS on the other hand has a completely different play style; at one point in the computer game play he identified a 'jump back' move that appealed to his more subversive sense of play; when in co – op mode with JF he repeatedly made the 'jump back' move for his own amusement, much to the irritation of JF. 'Play' is not the same thing for two players in the same game. 'Technicity' emerged in these analyses as a key way to explain the variability of responses to the

experiences on offer.

**Conclusions**

There is a clear need for further empirical work to understand the ways in which different technicities co exist and co create differentiated technologically mediated identities. However the work we have already done should first of all challenge the idea of a friction free economy driven by an homogenous class of the technologically adept. The 'Long Tail' of the Web 2.0 media economy creates difference as an engine of consumption and, through our constant technological inscription, as a marker of identity. This difference is where 'technicities' come into being. However questions of power and value do not dissolve – indeed the seductions of technophilia make them more urgent. Who gets to play in the technosphere ? According to whose rules ? Wherever we feel there is a right way and a wrong way to play we should be on the alert for the assumptions that underpin dominance. The question is which technicities will be valued and 'exploited' and which will be demeaned or overlooked in the search for new ways to capitalize on contemporary technoliteracy in general?

Technicity could also emerge as a a key marker of a subject's ability to exercise the flexible repertoire of interpretive responses demanded by increasingly transmedial cultural landscapes. It is already clear from our small research how different technicities 'place' subjects in very different parts of a technological habitus.

These questions will be at their most pertinent in the realms of education for the creative economy with which this paper opened. How different technicities are addressed, nurtured, or squashed will have a significant bearing on how future generations view themselves in relation to dominant notions of expertise and cultural authority.

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