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How Do You Play? - Identity Technology and Ludic Culture

Professor Jonathan Dovey

> If we examine how the word play is used … we find talk of the play of light, the play of waves, the play of a component in a bearing-case, the inter-play of limbs, the play of forces, the play of gnats, even a play on words. … The movement which is play has no goal which brings it to an end; rather it renews itself in constant repetition. The movement back and forwards is obviously so central for the definition of a game that it is not important who or what performs this movement. (Gadamer, 1981: 93)

THE COMPUTER GAME

The computer game becomes a crucial site of investigation since it is produced through the interplay between an increasingly ludic culture and a world that is increasingly technologically mediated .Stepen Kline et al (2003:74-75) argue that the computer game is the 'ideal commodity' of **post Fordism**. Particular social and economic moments produce their own 'ideal commodities' – so the mass produced car and the suburban house are in some ways the ideal commodities of **Fordist** regimes of capitalism, 'goods around which a whole set of practices and values that were vital to the regime were arrayed.' These ideal goods were 'all imprinted with the stamp of a mechanical production process that emphasized structure, solidity, and reliability.' For Kline et al the computer game represents, in both production and consumption the ideal product of the contemporary moment. In its technological bases, its 'youthful workforce of digital artisans and netslaves', its ability to colonise every aspect of leisure time and space, in its reliance

upon simulation and through the intensity of its marketing and consumer surveillance techniques.

However the computer game also serves as a diagnostic site for a culture grown more and more ludic; the incursion of pleasure and desire into the public sphere, and the our increasing dependence upon technologies that demand ludic engagements have led me through computer games to a consideration of ways in which thinking about games and play can help us to understand contemporary culture. Johannes Huizinga and Roger Caillois, The great Humanist theorists of play as culture offer us a way into this argument - but will need radical overhaul to be relevant to the contemporary sphere. Caillois and Huizinga were both writing from within the formations of modernism, in which the triumphant notes of 'progress' and 'civilization' ring out undistorted by the white noise of the post modern, the distortion of relativism or the creaking collapse of grand narrative. The roots of humanist play theory in **classicism** leads both Caillois and Huizinga to argue for the primacy of a particular kind of play.

AGON & ALEA

Caillois describes (his, 1950s) contemporary culture as formed through the interplay of agon and alea ('agon' are games of competition, 'alea' games of chance)

> 'Agon and alea imply opposite and somewhat complementary attitudes, but they both obey the same law – the creation for players of conditions of pure equality denied them in real life. For nothing in life is clear, since everything is confused from the very beginning, luck and merit too. Play whether agon or alea, is thus an attempt to substitute perfect

situations for the normal confusion of contemporary life' (Caillois 1958:19).

However it becomes clear in his account that the agonistic subject is the preferred subject of 1950s capitalism:

'In societies based upon the combination of merit and chance, there is also an incessant effort not always successful or rapid , to augment the role of justice to the detriment of that of chance. This effort is called progress.' (Caillois 158 :78)

The agonistic subjects relies solely upon him/her self, practicing, training, playing by the rules to succeed in sport, business or life. The agonistic subject competes by the rules of the game to become a success; the rules of the game are the social rules of meritocracy, in which the best will be rewarded. The practice of agon presupposes sustained attention, appropriate training, assiduous application and the desire to win. It implies discipline and perseverance. The agonistic subject is the preferred subject of protestant capitalism, competing steadily by the rules in order to get that house in suburbia and provide that car in the garage. The aleatory subject on the other hand, 'negates work, patience, experience, and qualifications' (Caillois 1958: 17).

The steady, respectable, rhetoric of play as progress has been replaced by a far more aleatory experience of society and culture- Beck & Giddens idea of 'reflexive modernity' argues for a world in which chance and risk present themselves as characteristic features of our day to day lives. We now have the sense of living in a more complex, chaotic and risky world, in which social management and personal decision-making are matters of probability

calculation and risk management. With this sense of the re assertion of the forces of chance against those of progress there has been a marked shift towards play and playfulness in work and public life. Indeed play, through its functions under the sign of consumerism, has itself become a form of work,

> 'Post modern consumer culture … converts play into the engine of insatiable consumption, which drives the economy without leading to personal fulfillment.' (Oriard 1991: 484) Jeremy Rifkind argues that the commodification of culture is a primary drive in contemporary capitalism, and that since, playfulness is at the root of culture, ' the commodification of culture is above all else, an effort to colonize play in all of its various dimensions and transform it into purely saleable form.' (Rifkin 2000:260 cited Kline et al 284)

These shifts toward 'play as culture' can be exemplified in many ways.

Debates within the mass media public sphere (from Habermas onward) have been characterized by anxiety about the disappearance of seriousness. Susan Sontag claimed that part of her mission as a novelist was:

> 'to keep alive the idea of seriousness. You have to be a member of a capitalist society in the late 20th century to understand that seriousness itself could be in question' (Garis 1992: 43).

Within the Media these debates have been particularly acute at the interface between news – the hard core of the idealized public sphere - and entertainment, (Dovey 2000: 16-17). In this context we should note how televisual reality itself is now constructed as a game in the formatted 'Reality TV Game Show'. Anxieties about the alleged disappearance of seriousness are to be found wherever we encounter the phrase 'dumbing down'.

Secondly in economics, the effects of a globalisation contribute to, what Beck et al, have described as a 'risk society'. Problems in a distant far eastern market could easily lead to lay offs in your hometown as the protective power

of the nation state declines. Short term contracts and the rolling back of employment protection under the neo liberal drive to 'anti regulation', and corporate theft of pension funds leaves individuals with little or no long term security of the kind that was the ambition of the agonistic Fordist worker (see: Sennett). Moreover this insecurity in the economic realm is compounded by, on the one hand, the unceasing restlessness of consumerism, and on the other, by the decline of the family and traditional gender roles

> 'Individuals are now expected to master these 'risky opportunities' without being able, owing to the complexity of modern society, to make the necessary decisions on a well founded and responsible basis, that is to say considering the possible consequences' (Beck 1994: 8).

The central cultural and economic space occupied by national lottery systems is a good symbol of the way chance has re entered the public arena at the expense of alternative methods of welfare tax . To move the argument back onto Caillois' territory we can see a similar shift toward the aleatory at work in regard to public policy on lotteries. At the time Caillois was writing he was still able to observe that there was a conflict between the principles of agon and alea in attitudes towards public lotteries. As publicly sanctioned gambling the agonistic subject was bound to look down upon the public lottery as an affront to the principle of equality of outcome through equality of effort according to 'the rules' . However this situation is now reversed, despite some religious and moral qualms even Britain, the home of the supreme agonistic principle of 'fair play', now funds massive amounts of public culture and social welfare through lottery profits. The aleatory principle has become an essential part of the state's economic policy; contemporary state capitalism seeks to harness the restless desires of consumers to exist in a permanent state of upgrade and makeover through lottery gambling:

'Given that gambling phenomena are the original source of probability theory, which is the statistical method for analyzing the indeterminacy of most worldly things, it is as reasonable to see gambling as a metaphor for life as it is to count progress as such a metaphor.' (Sutton Smith 2001: 68)

CHANCE SCIENCE & SIMULATION

If each historical age has its own ways of producing truth about the world , then probability can be seen as the root of contemporary epistemology. This epistemology is at its most obvious in the use of simulation as a way of producing knowledge. Ludic culture produces simulation as a ground of knowledge just as 19th Century capitalism was based upon rational empiricism. The simulation operates in the subjunctive mode of 'If this (action/event/behaviour) then what are the chances of that (reaction)'. Moreover a simulation and a game are remarkably similar processes, they are both dynamic rule bound systems according to whose terms we agree to let a model stand in for, or become, reality.

This re discovery of chance as principle originates within the hard sciences of molecular physics, evolutionary biology and neuropsychology. Sutton Smith quotes scientists like Jacques Monod who argues: ' life on earth is entirely a matter of chance … essentially unpredictable' (Spariosu 1989: 217). Or at more length Eigen and Winkler:

"Everything that happens in our world resembles a vast game in which nothing is determined in advance but the rules, and only the rules are open to objective understanding … chance and necessity underlie all events. The history of play goes back to the beginnings of time … chance and rules are the elements of play. Once begun by the elementary particles, atoms, molecules, play is carried on by our brain cells. Man did not invent play. But it is 'play and only play that makes man complete' " (Spariosu 1989 : 224).

Sutton Smith (2001) himself has recourse to a very specific view of play. He concludes with an emphasis on the *biological* and adaptive function of play. Here play is described as "potential behaviour" which allows the "actualisation" of what are only "potential brain and behaviour connections" (p.229). He begins by identifying certain adaptive potential as essential in our contemporary context:

> In our world of radically and unpredictably changing environments, an evolutionary potential for creative responses require that organisms possess an opposite set of characteristics usually devalued in our culture: sloppiness, broad potential, quirkiness, unpredictability, and, above all, massive redundancy. The key is flexibility, not admirable precision. (Stephen J. Gould quoted in Sutton-Smith 2001: 221)

One way to represent such a world, in which the random and the playful are prime movers, is to set up a simulation of it in which certain rules are mathematically set and which then produces, or allows to emerge, observable. behaviours. In the hard sciences computer simulations are run to observe all kinds of behaviours from what really happened in the primordial soup to the spread of particular viruses - first of all simulation is a process of modeling,

Typically the phenonema under consideration are dynamic, a model therefore consists in 'structure plus behaviour' . Simulation happens when we observe the behaviour of the model, when it is 'set running' . For Social Scientists Gilbert and Conte (1995) this approach is summarized thus:

'…computer simulation is an appropriate methodology whenever a social phenomenon is not directly accessible, either because it no longer exists ….or *because its structure or the effects of its structure ie its behaviour, are so complex that the observer cannot directly attain a clear picture of what is going on'* (1995 :2, my italics).

In a more obvious and often quoted field, simulation is also of course widely used by the military; this has been growing for many years. In 1996 the US

Department of Defence Modelling and Simulation Office asked the National Research Council to convene a conference in which military trainers and members of the entertainment industries could share information. It was attended by game developers, film studio representatives, theme park industries, military trainers and universities (Prensky 2001 : 315). Marc Prensky in his book 'Digital Game Based Learning' (McGraw Hill 2001NY) claims that the US military are the biggest spenders in the world on simulation games for training:

> 'The military uses games to train soldiers, sailors, pilots, and tank drivers to master their expensive and sensitive equipment. It uses games to train command teams to communicate effectively in battle. It uses games to teach mid level officers how to employ joint force military doctrine in battle. It uses games to teach senior officers the art of strategy. It uses games for team work and team training of squads, fire teams, crews, and other units; games for simulating responses to weapons of mass destruction, terrorist incidents, and threats; games for mastering the complex process of military logistics and even games for teaching how *not* to fight when helping maintain peace' (Prensky 2001: 296) .

It is clear that warfare is now conducted on the basis of knowledge produced through simulation. This highly rule based mediated version of war of course produces its own counter image in the form terror – a viral resistance to the systemic totality of the computerized war machine.

This heightened awareness of play can be seen either as 'civilization gradually transforming itself to the point that it can indeed admit that play is as fundamental to life as are survival and religion' (Sutton smith 2001:67). Or, as confirmation of Sontag's anxiety, that seriousness has been overwhelmed by aggressively playful post-modernism.

The Subject in Play

This analysis of the operation of particular rhetorics in the definitions of and valuations attached to play clearly challenges the idea of play as an activity separate from the social order. They invite us to ask, what is going on for us as individuals when we play? In order to begin to think through this question, we turn to the psychology of DW Winnicott (1971) as it developed out of his accounts of childhood development published in *Playing and Reality* (1971).

Winnicott offers a great deal to our understanding of the ways in which play is *both* identity production and culture making.

> …on the basis of playing is built the whole of man's experiential existence. […] We experience life in the area of *transitional phenomena*, in the exciting interweave of subjectivity and objective observation, and in an area that is intermediate between the inner reality of the individual and the shared reality of the world that is external to individuals (Winnicott, 1991:64 our italics).

Computer games can be seen as a 'transitional phenomena' that facilitates exchange between the subject and the *mediated environment*. (DW's theory of the transitional object – an object upon which the infant becomes fixated since it represents 'something that is not me and is not mum' – thereby facilitating the separation of the child who is then enabled take up a position in the world.) This notion of transitional phenomena also allows us to see how the fact that computer games require a manipulation of technology also underpins our adoption of technology as an 'extension' of ourselves. According to Winnicott (1971: 47) "The thing about playing is always the precariousness of the interplay of personal psychic reality and the experience of control of actual objects":

'There is a direct development from transitional phenomena to playing, and from playing to shared playing, and from this to cultural experiences' (1971: 51).

'It is in playing and only in playing that the individual or adult is able to be creative and to use the whole personality, and it is only in being creative that the individual discovers the self' (1971: 54).

In Cultural and Media Studies, the turn towards Winnicott, by researchers such as Hills (2002) and Silverstone (1999b), signals an awareness of play theory within the existing study of text interpretation and fan practices. They both use Winnicott as a means of exploring the 'tissue boundary' mentioned below. To construct the 'viewer' as a creative participant in the production of meaning, or the performance of a text, is to signal a new kind of attention to the authority of the reader.

Silverstone describes media consumption as a form of play and makes some broad claims for the importance of play as a site of cultural production as well as identity formation:

'Play enables the exploration of that tissue boundary between fantasy and reality, between the real and imagined, between the self and the other. In play we have license to explore, both our selves and our society. In play we investigate culture, but we also create it' (Silverstone 1999: 64).

Hills (2002) insists on viewing fans particularly as 'players' and 'creators' and to do so he turns explicitly to Winnicott's notion of the 'third space' of play and the continuities between child play and adult play. He writes:

'Winnicott suggests that our emotional attachments within culture, or 'little madnesses', continue throughout our lives as a way of maintaining mental/psychical health. In this reading fandom is neither pathologised nor viewed as deficient, instead it can be theorised as a form of good health' (Hills 2002: 112).

Hills' focus is on fans as players but the same framework is entirely appropriate for games players. It indicates that Winnicott's writing on play is richly productive in understanding computer game experiences as just such sites of cultural production and identity construction. Although Winnicott's work was generated through a focus on child psychology he rarely confines his claims about the necessity of play for psychic health to just children . He argues that a capacity to play is central to both psychotherapeutic practice and to all satisfactory interactions between the psychic world and material reality.

In this reading, it is possible to argue that the computer game player is in some way rehearsing another version of those interactions between (internal) subject and (external) representations which are at the root of the personality, as well as at the root of culture. These are compelling arguments for the significance of game cultures.

However, we might perhaps also be tempted to ask what it means for so many of us to be investing our creative energy into a potential space already branded by Sony Playstation as "The Third Space". An acceptance of Winnicott's arguments would naturally lead us to argue for the importance of the production of *quality* play experiences that produce the kind of creative expression that he prescribes as a necessity for psychic health.

The Social Subject In Play

The use of Winnicott to think about the playing subject only gets us so far. What of the subject as social being? How do the collective actions of playing subjects constitute a culture of game playing? What relation does this 'game culture' have to the cultures of work and production? To address some of these questions we turn to anthropology and performance theories, in particular to the work of Victor Turner (1982).

A turn towards performance theory enables us to better understand the relationship between play and culture. Boria, Breidenbach and Wright (2001 online), for instance, use the notion of ritual to interpret the forms of talk that occur in the online multiplayer game *Counterstrike*. They draw from the work of Turner (1982), who offers an account of the importance of ritualized play and performance in both the formation of individual identity and the formation of communities. Turner describes various types of play, both traditional and modern, and seeks to understand their personal and social meaning or value. He offers an account of rituals and play as the site of the affirmation of cultural norms (through for example, certain ritualized rites of passage through which children become adults in particular communities).

The special time and space of play is described by Turner as either liminal or liminoid, they have a different character and are positioned differently in relation to the dominant meanings of the culture within which they are located. The liminal is characterised as a type of play or ritual that is often compulsory in some sense, either a community gathering or an essential 'rite of passage'.

Whilst these activities may contain within them either the 'abrogation or negation' (1982:58) of existing power structures and subjectivities they are seen as a means of more securely anchoring their participants to the status quo. The player returns from the liminal ritual space with a renewed sense of his or her place in the established social order. Liminoid phenomena on the other hand are much more individualised and commodified, they, 'develop apart from the central economic and political processes, along the margins, in the interfaces and interstices of central and servicing institutions – they are plural, fragmentary and experimental in their character.' (Turner, 1982:58) Liminal and liminoid are both for Turner the 'seedbeds of cultural creativity' but it is the liminoid that has the power to transform through radical 'manifestoes' and critique.

Turner's notion of the liminoid thus gives us the notion of play as not just a source of creativity but also a site of for the generation of alternative social orders, for political interventions, for utopian imaginings. Thus, in Turner's understanding, ritualized play space may have both a hegemonic function, reinforcing power structures, *and* a critical one, generating new possibilities. These ideas help us to understand the relationships between player subjectivity, player group identities and the wider social world. For instance the concept of the liminal as a social space, which enables the individual to adapt to the social world, is clearly present in the virtual worlds of Massively Multiplayer Online Role Playing Games such as *Everquest*. The variety of practices that are undertaken by people in this game demonstrates the enormous symbolic meaning attached to the playing of the game by the

players. Gamers have held in game political demonstrations, started newspapers, collected charity donations and held vigils and created memorials in game to real life events. (Citizen Lab 2003) The online game world is a liminoid space in which participants play within prescribed roles that have a generative, creative and playful relationship to the ordered worlds of daily life.

An understanding of these liminoid "situations as settings in which new models, symbols, paradigms arise" (Turner, 1982: 28) provides us with a means of acknowledging the role that play can have in allowing individuals and groups to subvert dominant meanings. Turner also offers us a further useful analytical tool, the notion of *communitas*. This concept is developed in his work to explain the firm feelings of belonging that we may have in group-based cultural activities. *Communitas* can be identified through the symbolic structures generated within the group such as particular nicknames and 'private' language systems. For Turner *communitas*:

> …does not represent the erasure of structural norms from the consciousness of those participating in it; rather its own style, in a given community, might be said to depend upon the ways in which it symbolises the abrogation, negation or inversion of the normative structures in which its participants are quotidianly involved. (1982:58)

This idea is useful in understanding how specific game communities both communicate their identity in relation to one another, how for instance the female games community enunciate their identity in relation to the dominant masculine games community, but also how 'communities of players' in general position themselves as 'other' to ideas of a work based communities.

Technoplay

This account of the influence and force of ludic culture in the contemporary world intersects with another history to produce the computer game as 'ideal media form' (if not also 'ideal commodity'). This history is the history of the relationship between play and the development of computing technologies and cultures. At the heart of this account lies the synergistic relationship between numbers, probability and rules that in turn manifests itself in particular kinds of experimental and playful attitudes towards computer technologies within their own development community.

Hacking culture is key to this story. We need however to understand that the hacking sensibility which has informed so much of the development of computer culture predates the digital age. To 'hack' in its original meaning was to create a clever practical joke based in the manipulation of complex systems. The technical operations of hacking derive from an original playful cast of mind that was a direct reaction to the systems of scientific and corporate instrumentality. '…the word hack has long been used to describe elaborate college pranks that MIT students would regularly devise, such as covering the dome that overlooked the campus with reflecting foil….to qualify as a hack, the feat must be imbued with innovation, style, and technical virtuousity.' (Levy 1994: 23). Similarly Kent records the activities of the MIT 'Tech Model Railroad' club of the late 50s and early 60s as a kind of proto hacker environment,

> 'The Tech Model Railroad club appealed to students who liked to build systems and see how things worked. …These strange college students, with their funny jargon and nerdy ways did more to start the

computer revolution than any Silicon Valley engineering team.' (Kent 2001:16)

Kent goes to explain how the TMRC went on to invent 'Spacewars', one of the very first computer games, as a hack. A prank to see what alternative uses could be found for Digital Equipment's state of the art PDP-1, ('about the size of a large automobile') recently delivered to MIT. Their work was unauthorized, unofficial and motivated by their particular idea of fun. There is an ethos, an attitude and a culture at work here that is produced by the conjunction of young men, technology and the mathematical systems of coding that are the language of computing.

As Kent indicates this 'technoplay' attitude went on to remain a key signature of digital culture. It can be observed at work for instance in the history of the development of the windows interface by Parc Xerox, Apple and Microsoft. (ref?) From the many possible versions of interactivity that were being discussed through the 1970s we finished up with what Sandy Stone terms 'poke and see' interactivity- essentially an interface that requires us to play with it, to experiment to see what happens. Nobody gets anywhere with computers by sitting and waiting for it to happen – we have to take the first experimental and experiential steps towards our desired instrumental outcomes. It is a machine system that requires play . Indeed it is a common experience for many users that reading the manual to explain a software is usually a lot less useful than simply sitting down and playing with it – finding out what it will do. Furthermore the development of computer software is driven by this subjunctive, experimental mode – how can I make this software do things that it wasn't designed to do? How can it be adapted, reshaped,

stretched? It is as if the commodities of Fordist mass culture had all been released with a customizing toolkit that required consumers to rebuild it to their own specification before use.

Writing of the development of computer games and their relationship to the business of digital culture Sandy Stone has referred 'the insertion of the play mutation into the corporate genome' (proper ref and more explanation req'd). Play has become a both a part of the technological systems in our relationships with the interface as well as part of the system of managemement favouroured by corporate managers in the networked society. The new industries of Silicon Valley and Seattle encourage their digital artisans to combine work and play – with good food, permanent Frisbee and lots of social bonding it really is no problem to persuade employees to put in 12 or 18 hour days. If play has become work through consumption then work has also – for a select few- become more playful.

This short account suggests that the ludic impulse has been a significant driver in the shaping of computer technologies. Firstly Hacker culture has been constructed as inherently playful; secondly computer systems require experiential learning rather like school based learning through play and finally the rule based system of coding has much common cognitive ground with the rule systems of games.

Gameplay as Technoliteracy

The computer game is produced as an 'ideal' media form by the conjunction of a culture in which the playful and the ludic is once again of serious concern and a history of technoplay in which a playful relation to technology has informed its entire development. The electronic public sphere increasingly reflects a world where chance has re entered consciousness in the wake of a widespread challenge to rationalism. This return has been accompanied by the widespread incursion of the pleasure principle into public space that is often perceived to be at the expense of discourses of progress. By placing the computer game within this nexus of the ludic and of technological mediation we are consciously constructing it as both media form and as material for cultural diagnosis. We can look at the computer game produced as 'ideal' form through wider cultural processes – investigating the game in turn allows us to investigate some of its wider discursive determinants and what, in turn, they have to tell us about the culture we live in.

As Mass media are all becoming more participatory in their transformations through digital technologies play becomes the paradigm for understanding our media experiences - the post web internet is just such a 'participatory' space, a zone in which users can continue their relationships with TV, music or film by linking up with other consumers, or downloading customized artifacts. Computer games can be seen as having some of the same significance, a form that compels the user's participation in the realm of spectacle, acting out, having agency within the pervasive mediasphere that is such an important part of our natural environment. The computer game answers the need for us

to be able to play in the mediasphere – just as, play theory argues, we have a human need to play in other areas of our environment. The computer game is here seen as the toybox in the corner of the media zone – the very texture and quality of the game image is like a primary colour pastiche of optical realism. Here we can act out all kinds of mediated fantasies, we can run championship winning sports teams, indulge in militarized gore fests, become a 'kick ass riot grrl' or 'spell-casting witch'. This acting out occurs within the circumscription of the 'magic circle', the zone of play in which we agree to suspend the rules of the everyday in favour of creating a space that allows us to experience the taboo, the challenging, and the passionately desired. What is more we can also enjoy at least a part of the intensity of **affect** produced in other media forms – the adrenalin based, visceral, pleasures of gameplay offer powerful experiences of identification.

Moreover it is possible to argue that important 'work' gets done in this playground – as in those of the schoolyard. Configurative media recruit us to a **hermeneutic** process that is particularly relevant to the age of digital media and culture. One of the activities that we are involved with when we play a game is trying to work out its rule set – of course we learn the basic rules and objectives as we begin the game, however in a wider sense we are also figuring out what the game engine does, what it wants us to do, how far we can 'get away' with testing the limits of the game code. Our gameplay can be seen as a process of trying to understand, through our developing skill levels, the way that the game works. In this way it is argued that computer game play provide a crucial site for the development and education of our individual

'technicity' where this quality will be a significant part of our subjectivity in the 21st century,

Finally the game industry – developed from this conjunction of ludic culture and technicity – can be seen as a central driver in the development of the new media landscape. If we want to understand New Media computer games become a central site of critical investigation. Although the hacker ethos has been successfully commodified within a production line system that would have made Henry Ford proud it nevertheless survives in the creative passions that developers and users bring to the form. The hacker ethos built the internet and the game industry. Both relied upon the untold, unpaid hours of passionate technological engagement /play. The games industry as we have seen is now a major driver within technologies of digital visual representation. Within the cycles of limitation and opportunity offered by the political economy of the industry as a whole it is possible to see, in the creative activities of **modders**, independent game developers and artists the seeds of new media forms which may well turn out to be as important to the 21st Century as cinema was to the 20th Century.

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