

The Experience of Information in Computer Games

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ABSTRACT: This paper responds to Espen Aarseth's provocative proposition about the way First Person Shooter games reveal a fundamental modality of human experience by embodying a dialectic of "aporia and epiphany." It is argued that if the First Person Shooter *Doom* tells us something fundamental about living today, then this is because of the programmatic nature of the prevailing cybernetic world view of which *Doom* is an elegant illustration. The military origins of this world view are then examined. The logistical tendency to order and control contingent events is discussed as a central legacy of the military source of cybernetic thought influencing contemporary technoculture. The concept of information in the widespread notion of information processing is cited as a key element of this legacy. Information is examined in its initial mathematical conception as a means for calculating future eventuality in a cybernetic communication system. The experience provided in the First Person Shooter is discussed as a ludic variant of the logistical tendency to anticipate the future by means of modelling and simulation. The ironic or critical potential of the First Person Shooter as a game which not only plays out but also plays with the prevailing values of technoculture is discussed.

KEYWORDS: Computer Games, Cybernetics, First Person Shooters, Information, Logistics

INTRODUCTION

This paper is best understood as a response to Espen Aarseth's [2] provocative proposition about the way computer games embody a fundamental modality of human experience, namely, one in which life seems to play itself out as a dialectic of "aporia and epiphany." This pair of "master tropes" constitutes, he says in another place [1], "the dynamic of hypertext discourse: the dialectic between searching and finding typical of games in general" (92). Having discovered the workings of this dialectic in the classic First Person Shooter, *Doom*, Aarseth [2] claims that the constant struggle against aporia to achieve epiphany so evident in *Doom* gameplay models one of the "prenarrative master-figures of experience" (39). There is not time here (an entirely characteristic and not irrelevant situation today) to accept Aarseth's invitation to explore the implications of this claim with the care and rigor it deserves. In lieu of this exploration (which I promise to pursue in a more temporally resourced framework), I propose here to follow Aarseth's path in reverse, from life back to game, and to re-play the parallelism between the two. This will enable me to characterise the cybernetic nature of the parallel between computer game microworld and life in the real world. But the return to the First Person Shooter

game genre will also provide scope for speculating on a certain evasion of the inevitability of this parallel evident in the genre. I hope to show that the First Person Shooter provides an aporia of its own to the theoretical journey that discovers it at the heart of the cybernetic world picture of contemporary technocultural experience.

THE MILITARY INFORMATION SOCIETY

All too precipitously, then, I present my argument in response to Aarseth's claim, with the proviso that it will be necessary subsequently to qualify this position: If *Doom* tells us something fundamental about living today, then this is because of the programmatic nature of the prevailing cybernetic world view of which *Doom* is an elegant illustration. The term which best evokes the origin of this world view, "military information society" was coined by Les Levidow and Kevin Robins in their 1989 anthology, *Cyborg Worlds: The Military Information Society* [8]. It characterises their prognosis for contemporary society and culture under the ever-increasing influence of "infotech" (159). This society is one in which the military plays a pervasive role via the spread of computer culture and the resultant dissemination of a military-inspired cybernetic paradigm of the world into all aspects of existence. It is worth citing their introduction of this term in *Cyborg Worlds*. They argue that the kind of discipline promoted in contemporary society

involves disavowing human qualities not so easily reducible – or, rather, redefining them according to computer metaphors. Through infotech, military models of reality appeal to widespread illusions of omnipotence, of overcoming human limitations, even as they conceal our relative impotence. Computer-based models of war, work and learning can promote military values, even when they apparently encourage the operator to 'think'. In all those ways, we are presently heading towards a military information society, which encompasses much more of our lives than we would like to acknowledge (159).

Levidow and Robins emphasise the centrality of computer simulation practices in infotech's promotion of "military models of reality" that are designed to attain "total control over a world reduced to calculable, mechanical operations" (159). The "military values" thus promoted concern the control of complex situations, the anticipation of contingencies and the development of reliable problem-solving techniques and technics. "Information processing" would be one of the most important of the "computer metaphors" in question here that redefine "human qualities" of intelligence, thinking and decision-making. It should be noted in passing that counter to an essentializing humanist position that subtends perhaps the analysis of Levidow and Robins, I would argue that human qualities have been subject to constant redefinition since the human was defined in its modern form. The computer can be understood as the latest in a series of "defining technologies" that have influenced conceptions of the human and of the world the human inhabits.

Before moving on to the analysis of “information processing”, I should further qualify my critical engagement with the significant work on the military pedigree of cybernetic discourse found in *Cyborg Worlds*. This work largely rests on a classic humanist conception of technology as instrumentality in conjunction with the pervasive humanist assumption that war is an exceptional, aberrant mode of human existence and endeavour. I can only respond to this schematically here for reasons already outlined, but my approach to the wider question of the relationship between war and the military on the one hand and peacetime culture, politics and technology on the other is addressed more substantially elsewhere [4,5].

In brief, then, I would propose that while there is very little discussion of computer games in *Cyborg Worlds*, the book takes up a wide range of computer-based practices and forms and interprets them according to the following syllogism:

1. Computer technologies (including computer games) are products of military-driven cybernetics/technology.
2. The military and their “business” of war are a pernicious and aberrant dimension of human culture, technology and civilization.
3. Therefore, computer technologies (including computer games) are a bad influence on normal, peacetime culture, technology and civilization.

I will cite the work of Paul Virilio in the discussion of information in the next section. It is through engagement with his work and others such as Manuel de Landa and Friedrich Kittler that I develop an alternative syllogism in my approach to computer games:

1. Human culture and civilization are always already indissociable from the military and the “business” of war.
2. Computer games are part of human culture, technology and civilization
3. Therefore, computer games are a valuable means of interrogating the relation between war and peacetime culture, technology and civilization.

That is to say, my project is less oriented to the evaluative critique of computer games (and computer technology) on the basis of their connection to war and the military and their increasing encroachment onto the domain of peacetime existence. Nonetheless, the “living legacy” of war for contemporary computer culture cannot be ignored or dismissed as aberrant or exceptional. Indeed, this legacy is in need of sustained and rigorous examination, including examination of the epistemological premises for thinking war, peace and their relationship.

INFORMATION AND SPEED

Douglas D. Noble [9] points out in his contribution to *Cyborg Worlds* that “information processing” was first

conceptualised as a field of inquiry in early 1950s research conducted by the United States Air Force-sponsored Rand Corporation as “part of the military endeavour to understand ‘the human factor’ within a complex man/machine weapon system” (19). This research included the simulation of human decision-making in experimental computer programs and was thus also instrumental in the birth of the area of artificial intelligence (initially known as “cognitive simulation”). “Information processing,” “decision-making,” “problem-solving;” these 1950s synonyms for a cybernetic notion of mental functioning in concert with complex weapons systems dominate mainstream conceptions of efficient mental labour in today’s computerised society.

It comes as no surprise, then, that a computer-generated experience such as that had in *Doom* should reflect after a fashion this dominant cybernetic cast. Indeed, it comes as no surprise to Aarseth who, in coining the term “cybertext”, makes evident his reading of the influence of cybernetic theory in the emerging prominence of non-narrative, interactive textual forms such as computer games [1]. While he consistently acknowledges the cybernetic character of the ergodic hypertext, the legacy of the military imperatives driving the development of cybernetic discourse is not addressed. If Aarseth is right when he states that playing *Doom* evokes something fundamental about living today, it is because experience of the First Person Shooter game has been designed according to the model of information processing which disseminates the legacy of that groundbreaking work on the human-weapon system dyad. The aporia-epiphany dynamic amounts to a search for optimal utilisation of the control interface in order to solve clearly defined problems presented to the human user in terms of goals sought and encounters with obstacles to achieving these goals.

Information is the medium through which the gamer strives for control over the system—measured via achievement of the game goals—in which s/he is involved in a First Person Shooter game. This involvement in the game can be described in relation to the computer devices that form the other components of the system. The gamer is between the output devices of screen and audio reproduction and the input devices of keyboard, mouse, joystick, gamepad and the like. This classic scenario of computer-mediated interactivity recalls the “primal scene” of wartime cybernetic research into maximising the effectiveness of the enemy-man-weapon interface, inaugurated by Norbert Wiener’s work on the development of an “Anti-Aircraft Predictor” system. There is no time here to explore in detail the relevance for First Person Shooters and computer games more generally of this important, if unsuccessful, project. Reference must be made in passing, however, to Peter Galison’s extraordinary and insightful essay on Wiener’s wartime work, “The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision” [5].

In the First Person Shooter, the player plays at mastering the communication network in which s/he is a key node. Information concerning variables such as player avatar location, enemy threats and actions (whether avatars or

AI-motivated), weapon selection, ammunition stocks, secrets discovered, and health levels is received via the output devices. The player processes this information under the pressure of realtime updating of the dynamic situation and responds with messages sent back along the communication network via the input devices, perpetuating the mutual feedback of player and game microworld.

Realtime flow of information, then, is the engine driving the generation of possible worlds that is central to First Person Shooters and to the “simulation industry” more generally. Paul Virilio [12] calls the computer an “inference engine” to highlight its efficacy for the modelling and simulation of alternative scenarios, indicating its deep affinity with a “logistical” dynamic of anticipatory virtualisation that is prevalent today (58). Virilio characterises the contemporary technocultural milieu as one in which the military practice of logistics has overflowed into all spheres of social and cultural existence under the impetus of the twentieth century legacy of total war and the subsequent imperative of the threat of total nuclear annihilation, undermining any clear distinction between military and non-military experience [11]. Logistics, a discipline of resource management that weds the socio-economic to the military, has been central to modern war since the nineteenth century. In the era of what Virilio [11] has termed “pure war”, it tends toward an apotheosis in which it becomes a general transformative principle operating to render all aspects of existence into “flow charts” coordinating the permanent preparation of war (23). The concept of information in cybernetic discourse and cybernetic-influenced disciplines such as operations research and systems analysis has been central to the diffusion of the logistical principle [13].

The crucial point for our discussion of the experience of information is that speed is central to information processing. Indeed, information, in its cybernetic *ur-form* as a mathematical expression of the probability that a given message will be transmitted in a communications network, calculates the future for the cybernetic purpose of better controlling it. As such, information aspires to the absolute speed of being in advance of events. As theorised by Wiener and Claude Shannon, the quantity of information is not static in complex cybernetic systems, but rather is recalculated after the receipt of each message at the control node (See Hayles [4], 53). At the level of the human user, “information processing” may be thought of as the translation or perhaps, apology, for this military-cyberneticist mathematical venture in generalised pre-emption, that is, acquisition in advance of the encounter with whatever is to be encountered.

In *The Information Bomb* [11] Virilio states that “whether it be speed of acquisition, transmission or computation, *information is inseparable from its acceleration in energy terms* – slowed up information being no longer even worthy of the name, but mere background noise.” (141, Virilio’s emphasis) Anyone who has been fragged by a rapidly passing blur while standing around waiting for

his/her screen to update in multiplayer *Quake* knows the truth of this about information. Its ephemeral quality speaks of the relation of information to the present moment, a relation which is inherently virtual inasmuch as the function of information is to anticipate the future so as to render it already past, that is, already under control, already “squared away”. “Knowledge must constitute action” says visionary cyberneticist Stafford Beer, dreaming of a computer model of the social system based on the U.S.A.F’s “SAGE” air defence system of the 1950s and 1960s. (see Levidow and Robins [8], 166). As with Aarseth’s master-figure of experience, knowledge here is conceivable as a product of information processing that maps out goal-directed pathways requiring decisions about how to proceed. Information enables the user to extrapolate the twists and turns of those pathways as if they had already been traversed.

FIRST PERSON SHOOTER AS THE GAME OF LIFE?

The First Person Shooter game can serve to illustrate this dominant tendency of contemporary technoculture, although there are limits to this service as I will indicate below. Speed is of the essence in executing a successful sequence of controlling communications in a First Person Shooter game. As Aarseth has rightly analysed, however, the First Person Shooter provides an experience by which one comes over time to achieve this realtime performative success by means of frequent repetition and review of the challenges the game throws up. His tripartite schema [2] of the interlaced temporalities in which one becomes involved when playing *Doom* – the realtime interaction of gameplay, the negotiation time during which one reviews failures and hypothesises solutions to game “aporias”, and the experience of the game as completed pathway – is an apt characterisation of the classic First Person Shooter game experience (37-38). The heart of this temporal complex is the aporia – epiphany dialectic, that is, the dynamic struggle between game challenges and their overcoming or circumvention. Playing, then, is training, training for the performances that overcome particular game challenges within one level/stage/mission, and ultimately for the performance that one day ends the game. Of course, a really good game will still be fun even after this performance is achieved, such will be the variety of possible successful performances and eventualities in the fullness of its ergodic temporality. The essence of the mechanism, nonetheless, is this problem-solving dynamic of modelling solutions via experimental repetition of the challenging scenario.

The First Person Shooter, and realtime computer games more generally, inasmuch as they are ergodic forms with this tripartite temporal structure, can be thought of as a tonal variant on the logistical theme dominating computer usage for the modelling and simulation of real situations, namely, that of the development of preemptive control over those situations via the anticipation of all possible eventualities. While a computer game is not one of those “computer-based models of war, work and learning” that Levidow and Robins [8] list as influential in the

promotion of military values of control, it is not difficult to see that a First Person Shooter game draws on the development of these models in its design of an enjoyable training routine in an imaginary microworld of one kind or another. While the 3D rendering engines at the heart of the First Person Shooter, such as the influential “Quake III Arena” software, were commercial innovations, they owe a profound debt to the military-driven development in flight and vehicle simulation of an interface based on an “embedded” perspective—a term which has acquired new resonance in the wake of the “embedding” of media coverage of the “Gulf War 2” to provide quasi-first person perspectives of military action. Furthermore, the licensing of *Doom* by the U.S. Marine Corps [10] as the basis for a modified training simulation evidences something of a homecoming indicative of the wider cross-fertilisation between commercial and military “imagineers” which some such as J.C. Herz [7] have referred to as the “military-entertainment complex” (197).

It would be reductive to conclude, however, without at the least beginning to qualify this view of the First Person Shooter game as an illustration of a wider impetus in contemporary technoculture that I have termed, after Virilio, logistical. While in many respects the First Person Shooter game can answer to Aarseth’s evocation of it as the “game of life”, albeit life in the contemporary milieu of information processing, as a game it always retains the potential for play with the elements that make it a game. This is part of the fun of any game, for instance, the “play” between the instructional or pedagogical intent of the designers and the “useless” pleasures that can be had of it. For example in First Person Shooter and other ‘shooter’ games the desire of players to shoot things other than designed enemies such as background “scenery” items simply for the fun of it has gradually been incorporated in the interface of many games, for example, *Metal Gear Solid 2* (Konami, 2002), and *Return to Castle Wolfenstein* (id Software, 2001).

In the case of a genre of games such as the First Person Shooter, what is also evident is an evolving generic awareness or “reflexivity” about how the game is played and evaluated as a cultural form. After the groundbreaking success of *Wolfenstein*, *Doom* and *Quake*, the genre was initially dominated by Science Fiction/Horror fantasy scenarios. What has emerged as a trend within the genre from the late 1990s is a hybridisation with battle strategy simulations and realtime strategy games so that games like the *Medal of Honour* series, *Battlefield 1942*, and the *Tom Clancy* series of “tactical shooters” draw on actual historical military conflicts or on realistic near-future scenarios for the design of levels and mission maps. In these the military roots of the logistical “ethic” of training for preemptive control seems especially marked in the cut-scenes, the attention to weapon authenticity, and so forth. It is as if the fantastic monsters of *Doom* and its progeny have been unmasked retrospectively as discarded disguises for enemy soldiers. But this unmasking needs to be understood as itself an element of the genre’s playing

out and playing with its own history and with perceptions of the First Person Shooter game, a point best illustrated by the recently released *Ironstorm* (Wanadoo, 2002). This game, which in one of its opening credit screens describes itself as an “anticipation fiction”, proposes an alternative world history for its setting, one in which the First World War never ended. It extrapolates a decades long European conflict and stages the action in 1964. Weapons and communication technology are designed as hypothetical products of this alternate historical trajectory.

Like the work at the margins of historical discourse concerning alternate or “counterfactual” history upon which the game draws, *Ironstorm* plays a double game with the real (historical) world. On the one hand it depends for its realisation of the alternate world on conventional notions of historical development and the belief that present reality is a product of history. On the other hand, it foregrounds its own reflexive play with these conventional historical notions and beliefs by mobilising them to produce a virtual reality from hypothetical alternative premises. As such, *Ironstorm* comments ironically on the recent “inflation” of the First Person Shooter genre from fantasy game to (historical) reality simulator. It has some fun with those accounts – including in some ways my own – that follow the famous Ronald Reagan comment that computer games are training tomorrow’s warriors.

This is to some extent true of all First Person Shooter games. Elements of gameplay play a similar role in perturbing the correspondence between the game and “Information Processing 101”. For instance, the “health” component of gameplay constantly undercuts the parallel between game and real. In games like *Medal of Honour: Allied Assault* (Electronic Arts, 2002) the acquisition of a first aid kit or medicine bottle (by moving over it), marked by an “unpacking” sound or the audible swig of a drinkbottle, boosts one’s health meter reading, constantly reminding the player precisely of the “realism versus playability” tradeoff out of which games emerge as games. Paradoxically, in real life the fashion for “powerup” drinks like *Guarana*, *Red Bull*, *V* and the like indicates a transcoding of cyborgian concepts of the human user into the wider technocosm – though this also has its ironic dimension.

Perhaps the very aspect of the First Person Shooter game which Aarseth identified as essential to its ergodic temporality, namely, the capacity to experiment repeatedly with different solutions to a given aporia until a way forward is found, also provides the most enduring challenge to the assimilation of the First Person Shooter genre and of computer games more generally to a paradigm of logistical discipline. If the game is a tonal variation on the training simulation model of “war, work and learning” so prevalent today, it also amounts to a meta-modelling of this model in a space suspended, however provisionally, from utilitarian frameworks of productivity. That is to say, in its very mode of constant repetition and starting over, the game provides a

restaging of this routine of information processing. The closure implicit in this microworld-view of experience as the progression from predefined problem through experiment to solution is opened to speculation in this restaging. The exclusion of the unforeseen, that is, what Virilio names the accident is made evident by the First Person Shooter game in the very achievement of that winning performance where each enemy attack is dealt with *exactly* as if it is seen before it arrives.

There is a critical potential to this speculative doubling of the cybernetic world view provided by the First Person Shooter game and computer games more generally. As Virilio has argued for a long time now, it is necessary to pay attention to the accident of any given technology and of technological developments as larger transformational forces. Cybernetics, arising from the military project of designing and programming accidents, has as its *raison d'être* the control of events via the anticipation of all the vicissitudes of their possible coming to pass. In marking out the exclusion operative in the informational experience of events, the First Person Shooter reminds us of a powerful technocultural desire to encounter the future in the form of anticipated, controllable contingencies. At the same time, it cautions us about playing that game, even if it is the only one in town.

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