Simulation, History and Experience in *Avalon* and Military-Entertainment Technoculture

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Abstract: This essay takes Mamoru Oshii's *Avalon* (2001) as a starting point for consideration of the impact of simulational interactive media on contemporary technoculture. The connections made in the film between virtual reality games and military research and development, and its quasi-simulational modelling of various historical 'Polands' in re-sequencing a dystopian end of history are the most valuable resources it brings to this study of how simulation's predominant development represents a major challenge to the forms of critical cultural reflection associated with narrative-based forms of recording and interrogating experience. Analysis of the methods and rhetorics of simulation design in the military-industrial (and now military-entertainment) complex will elaborate the nature and stakes of this challenge for today's globalising technoculture of 'militainment'.

Keywords: simulation, videogames, anime, war, history, technoculture, militainment

This article is not so much about Mamoru Oshii's 2001 Japanese-Polish, anime-live action hybrid feature, *Avalon*, as it is about the challenge that the film's subject—videogame virtuality—represents for the critical analysis of contemporary global, digital technoculture. I propose that videogames are exemplary forms of digital technoculture, not least because they illustrate the powerful influence of military technoscience on the latter. *Avalon* takes a look at this influence by extending into a near future a dystopian vision of what is increasingly known today as the military-entertainment complex. The film, a Japanese-Polish co-production set in a puzzle of contemporary and historical Polands (one in the time of World War II, one post-socialist, and one in a fictional near future), thematises key issues concerning this complex global folding together of military and entertainment investments and government funding, technical innovation, personnel, training and commercialisation. Most cogent for my concerns is the juxtaposition of game time with the fractured historical timelines of the different Polands the film mobilises in its dystopian narrative. I

examine the digital simulational forms and logics that are central to this confluence of indus-trial, technocultural and global entertainment developments in both their serious and enter-tainment contexts of articulation, and assess the challenge simulation poses both for narrative forms of cultural production and to critical engagements with the military-entertainment complex.

Avalon and the Military-Entertainment Complex after the Cold War

While being a key element in the dominant model of convergent, globalised media and pro-gram industries in the West, videogame production is not an insignificant phenomenon in Eastern European economies. If Russia's 1C[1] company led the way with its smash hit World War II Flight simulator, *IL-2: Sturmovik* (2001), more recently Eidos Interactive Hungary's *Battlestations: Midway* (2007) and *Battlestations: Pacific* (2008), and Ubisoft Romania (*Blazing Angels: Squadrons of WW2*, 2007, *Tom Clancy's H.A.W.X*, 2009 and *Silent Hunter 5: Battle of the Atlantic*, 2010) have provided successful titles for the X-Box, Wii and PC game markets.[2]

As is evident from the above game titles, the provision of immersive, interactive play in historical and hypothetical theatres of war is a major part of this Eastern European effort as it is in the rest of the global videogame program industries. Indeed, using terms like 'militain-ment' (Stahl 2010) and the 'military-entertainment complex' (Crogan 2003, Lenoir and Lowood 2005, Dyer-Witherford and de Peuter 2008, Huntermann and Payne 2010), several theorists have claimed that the virtual entertainment form in general should be approached as one heavily influenced by the close interconnections between military research and develop-ment in simulational and virtual hardware and software and the increasingly positive feed-back looping between this and its commercial dissemination in mainstream audiovisual cul-ture.

The term 'military-entertainment complex' can be understood as designating a significant modification of the existing 'military-industrial complex' installed in the Eisenhower admini-stration as the predominant model for the logistical organisation of American society and economy to serve the nation's strategic ends. As the term indicates, the relations between commercial enterprises, and in particular media and entertainment firms, and government funding and development agencies shifted significantly in the reformation of military techni-cal innovation in the post-Cold War period. SIMNET—the principal simulation networking project funded by the USA Department of Defence in this period—was one of the most im-portant transitional vectors for this shift. It also brought together elements of the two earlier

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[1] 1C Company was initially a general software firm with a major share of the business software market in the former Soviet Union. Their diversification into virtual entertainment is an exemplary model of the convergent economy that provides a post-1989 rhyme with the earlier transformation of Western infotech and communica-tions corporations into digital media giants. Polish game development is also lively, with several emerging de-velopers working increasingly in the international market. Possibly the most successful has been People Can Fly who contributed content to the *Gears of War* franchise and eventually became an in-house developer for the major videogame studio, Epic Games.

[2] Of course, before all of these was Alexey Pazhitov's *Tetris* (1984). The story of how it became one of the world's most popular and exploited piece of game software is more one of Western and Japanese game com-pany opportunism than of deliberate corporate strategy from within the then Soviet Union.

developments in crystallising a technics and rationale for computer simulation that mark much contemporary videogame and digital technoculture.

From the 1950s through to the 1980s the Department of Defence (DoD), through its agencies such as the Defence Advanced Research Projects Agency (DARPA, formerly ARPA, the Advanced Research Projects Agency), funded the majority of advanced research in real time computer simulation and associated technologies, such as computer graphics and networking. In the post-Cold War period, however, a more entrepreneurial approach by the DoD toward the computer industry at large (and the graphics and entertainment sectors in particular) was mandated by Federal Government policy. This was partly a fiscally motivated shift the early Clinton presidential administration saw as necessary in the wake of the excessive military spending of the Reagan presidency. It was also, however, a change demanded by the new industrial landscape where the computing technology developed in the Cold War era was now part of the wider industrial-technological landscape.

Combined with the massive rise in commercial computer research and development following the expansion in personal computing from the late 1970s, this has led to a situation in which Defence-funded research is not the principal source of technical innovation in the same way it was in the Cold War period. Nonetheless, it remains a very significant factor in cutting edge developments. Tim Lenoir and Henry Lowood point out that if the groundwork for computing and simulation technology was laid by military research and development in the 1950s-1980s, since then the traffic between military and non-military innovations has been increasingly significant in driving cutting edge developments (Lenoir and Lowood 2005, 433). After September 11, the Bush Jnr Presidency saw a massive spike in military and security spending. In the restructured research and development milieu, this has led to the DoD and the Homeland Security administration becoming major sources of funding for military and commercial applications of simulational technics and software.

Stahl and Dyer-Witherford and de Peuter have developed sharper critical analyses of the expansion of the military-entertainment complex in the post September 11 era of the war on terror. For Stahl, militainment supports a systematic withering of the political citizen-subject in USA society through the provision of a consumable entertaining spectacle of warfare across media platforms. It nonetheless has its contradictions, most significantly in the way that interactive forms such as videogames place the users in a (virtual) direct encounter with wartime experience, heightening the disjunction between their disconnected social reality and the violent death and destruction being conducted in their name in various parts of the world (Stahl 2010). Dyer-Witherford and de Peuter analyse videogames as part of the post-Cold War media of capitalist empire that continues to sustain a hegemonic cultural and political power over the development of global technoculture.

Avalon's dystopian near future scenario projects the exacerbation of the corrosive effects of militainment on culture. As 'real life' grows ever more drab and disenchanted, people seek a quasi-narcotic escape in the hyper intense realtime virtual reality world of perpetual combat, offered by the game of the film's title. *Avalon*'s opening sequences vividly evoke this experience of armed conflict by using a mix of realistic weaponry and hypothetical projections of the armoured and flying vehicles of the century of mechanised warfare that 'mecha' Anime does so well – and which makes it such a popular 'exotic' flowering of militainment in the West as well as in Japan. Produced by Mamoru Oshii, one of the leading anime direc-

tors known for his more experimental and conceptual treatments of the major themes and to-
poi of mecha and cyberpunk anime, *Avalon* wants to say something about virtual reality
gameplay and its technocultural context rather than just to celebrate them in a cinematic ren-
dering of immersive action.

The film narrative follows Ash (Malgorzata Formniak), a high level player of the game as
she discovers a pathway beyond the bleak existence of people caught, like herself, in a per-
manent alternation between subsisting in a drab, featureless and vaguely authoritarian reality
and going online for a temporary, intense escape into the gameworld of permanent warfare.
Various intrigue and conspiracy hints in the plot suggest different things about the nature of
the game, its distributors (the game is officially illegal but there is a strong suggestion that it
is run by the authoritarian rulers who control the society), the identity of those aiding Ash's
discovery of secret levels and possible pathways beyond the game-reality cycle. Ash eventu-
ally discovers the means to access a secret level of the game ('Special A') that resembles
contemporary Poland and is apparently not a warzone but an everyday urban space. She is
given the game goal of assassinating a former team member who has 'escaped' into this off-
limits, 'Matrix-like' zone of the game. The film incorporates numerous ambiguities about
whether the grey urban reality is not itself another illusion, and about the status of the third,
most realistic level of the game, and indeed whether everything is not the fantasy of the main
protagonist seen lying in her virtual reality 'casket' at several points in the film.

Figure 1. Ash's avatar in the *Avalon* gameworld

Source: Film still from Mamoru Oshii's *Avalon* (2001).

The film's metacommentary on the future of global militainment culture reflects on the
increasingly abysmal relations between real and virtual existence through its undermining of

the demarcations between these across the three 'worlds' of action depicted in the film. Discussions of the film in blogs and Internet fan sites tends to focus on this aspect of the film, carefully logging and glossing the various ambiguous elements in the overlapping mise-en-scènes of the game space, the gloomy, apparently real world of the players, and the illusionistic realist Poland which the protagonist enters in the final phase of the film (and possibly also game). Ash's personal quest for transcendence dominates the film's narrative trajectory. She searches for the original programmers of *Avalon*, a quest that dovetails with her drive to escape into a future world more real still than the realistically portrayed contemporary urban space in which at the end of the film she hunts down the 'unreturned' escapee from the virtual battlespace, Murphy (Jerzy Gudejko).

What is more intriguing than this somewhat conventional (at least for this genre of Anime in its globally disseminated form) thematic of a tragic metaphysical journey toward – and back – to an authentic non-technologically conditioned reality is the temporal juxtaposition of different 'Polands' in the construction of the overlapping realities in the film. It is *Avalon's* ambiguous rendering of the film's historical scene(s) that motivates my use of the film to set the stage for my discussion of simulation's challenge to the work of the critical interpretation of culture. The virtual space of *Avalon*, the online game, is a mix of World War II Eastern European battlefields and Cold War urban spaces of resistance to Communist rule (Hungary 1956, Czechoslovakia 1968). Oshii has noted the influence of media depictions of these on his filmmaking imaginary (Ingram and Reisenleitner 2006, 131). The apparently real world is a grey and sepia-toned Warsaw Pact urban dystopia of featureless city streets, 'soup kitchen' bistros, dilapidated public transport and high density cramped apartments. The 'Special A' zone of the film's final part is depicted naturalistically as a living colour, buzzing, contemporary post-89 city with recognisably Polish signage, landmarks and so on.

Iconic clichés of Eastern Europe's troubled twentieth century history are mobilised by this Japanese-Polish co-production in the service of its thematic development. The dystopian future of global digital technoculture is evoked as a return to the Cold War past of drab and lifeless totalitarian control. The only escape is an illicit but apparently tolerated (and even supervised) narcotic fantasy that reanimates in gameplay the high intensity combat violence of armed conflict. This is what the Cold War, for better and for worse, successfully regulated out of existence as an effectual, significant historical event. In the guise of a Polish city, contemporary post-Cold War Eastern Europe is rendered as an indeterminate hyperreality of global consumer capitalism. Ads for Coke and Nivea burst out in living colour in a busy cityscape where the renovated opera house is but one element in a montage of designer shop windows and cafes. As Ingram and Reisenleitner claim, 'the bleak world of authoritarianism seems to have been superseded by commodity fetishism, an obvious parable of the state of Eastern Europe today after joining the EU, which seamlessly incorporates traditional *Bildung* without breaking its (fast-paced) stride' (Ingram and Reisenleitner 2006, 136).

The logic of this reductive and achronological typing of the histories of Poland and (and as) Eastern Europe is tied to the hybrid live action-digital animation and simulation production pipeline of the film. It has implications not only for the film's thematisation of the loss of reality in simulation but also its reflexive doubling in the film's constant appeal to the viewer of this allegory of deceptive appearances.

'All but war is simulation:' The Contradictions of Military Simulational Logic

This logic for the film's re-purposing of history is to a significant degree conditioned by the military origins of contemporary digital simulation and animation techniques and technics. This is elegantly marked in the opening of *Avalon* through the sequence in which wireframe images of the virtual battlespace are shown before they are 'clad' with the trappings of naturalistic rendering of surface texture, colour, lighting and so on. The 'ground' is depicted as a mesh of hexagons. This is a war game board representation of terrain which was an innovation by amateur war game enthusiasts subsequently adopted by military digital war game programmers (Lenoir and Lowood 2005, 430). The hexagons improved the playing of many-on-one and one-on-many unit engagements in war games. The ground is designed for complex combat interactions. The simulated reality or realities of *Avalon* are all built on this ground.

Figure 2. The hexagonal sub-structure of *Avalon*'s virtual gameworld.
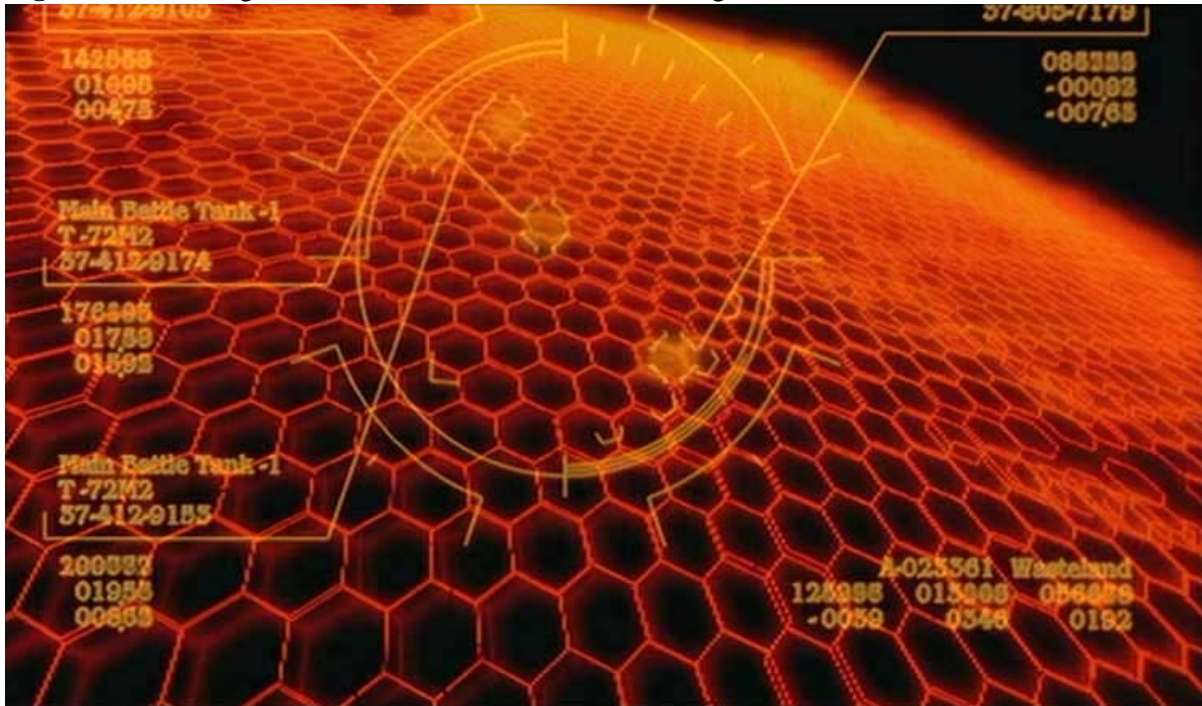
Source: Film still from Mamoru Oshii's *Avalon* (2001).

I want to elaborate on the implications of this often noted but equally often coyly evaded military cast of computer-simulated spaces. To do so, I will move away in this section from the thematic treatment of 'militainment' in this film that emerges from the entertainment side of the military-entertainment complex and toward the context of the dedicated military use of simulation today. In this context the issues are delineated more explicitly, if no less ideologically. Specifically, I want to take up the challenge to interpret the aphorism which appears on the web logo of the USA Army's Program Executive Office for Simulation, Training and Instrumentation (PEOSTRI): 'All but war is simulation'. As part of the 'branding' of this bu-

reaucracy in the midst of the USA military's research and development machinery, this statement might be taken to mean that its work is dedicated to the less important but nonetheless necessary task of contributing to the USA military's preparedness for war (as opposed to its actual prosecution). The opposition that underlies this reading is between war, as authentic, true, real eventuality and simulation as inauthentic, fictitious artifice that can at best approximate eventuality (Blackmore 2005, 154).

As an evocation of the war experience as exclusively authentic, this motto has resonances with meditations on the experience of industrialised, modern war dating from the post-First World War era. Ernst Jünger's autobiographical accounts of his war experience are among the most influential of these (Junger 1929, 1930, Zimmerman 1990). In the life and death encounter with not only the enemy but the new industrial capacity for killing and destruction on a massive scale, normal life is reduced to the status of a pale illusion in the face of the authentic forces governing contemporary existence. In his 1930 essay, 'Total Mobilization', Jünger prophetically extrapolates from this perspective in characterising the phenomenon and the inevitability of the mobilisation for total war. For Jünger this is an 'unlimited marshalling of potential energies' which 'requires extension to the deepest marrow, life's finest nerve. Its realisation is the task of total mobilisation: an act which, as if through a single grasp of the control panel, conveys the extensively branched and densely veined power supply of modern life toward the great current of martial energy' (Junger 1993, 126-127).

It is Paul Virilio who has most cogently characterised the post-World War II era, the era of what he calls 'pure war', as the accidental consequence of this wartime mobilisation (Virilio and Lotringer 1997). In pure war, the exceptional, temporary passage to total mobilisation mutates into a temporally unlimited preparation for an impossibly hot instant of total nuclear war. The undoing of any definitive distinctions between war and peace, logistics and strategico-political discourse, military and domestic/commercial economics and technoscience is the ongoing 'damage' of this accidental transformation of society into total war machine. It is a historical accident in both senses: it emerged out of the unprecedented total mobilisation of the industrial superpowers; and it is the accident that derailed history, that is, the ability to write or make history in the socio-cultural and political sense. In other words, it amounts to the inversion of Clausewitz' dictum that war is politics pursued by other means (Virilio and Lotringer 1997, 34). The anticipatory impetus of logistical preparation tends to foreclose historical becoming – conceived as a political or socioeconomic dynamic of struggle, progress, or dialectical process – in order to preempt whatever developments might impede it.

The PEOSTRI logo can be understood as an aphoristic articulation of this state of things coming from the perspective of the military-industrial-techno-scientific organisation. Taken instructively, 'all but war is simulation' can be understood as an admonition to the agency not to place too much faith in the value of its core technique of simulation, precisely because of this difference between the reality of war and the virtuality of all else. This is, however, a contradictory evocation of contemporary situation, inasmuch as it insists on the ability to demarcate the state of war from all else (simulation). In this respect it is nostalgic for the certitude and decisiveness readable in Jünger's claims for the authenticity of war as refuge from the illusory character of modern life. The onset of pure war would be characterised, however, by the progressive diminution of this certitude. The anticipatory, deterrent vector of the logis-

tical tendency undermines the differences between wars of national liberation and UN police actions, national defence and homeland security operations, invasion and pre-emptive counter-terrorist measures.

In *Virtuous War* James Der Derian describes the post-Cold War phase of this confusion between war and simulation when he examines the increasing ambiguity of the scope and nature of simulation training operations he witnessed at the USA/NATO Combat Maneuver Training Centre in Southern Germany at the height of the Bosnian conflict in the 1990s (Der Derian 2001). He describes the shifting characterisations of training missions that involved military forces in complex situations that included 'civilians in the area of operations, the press, local authorities, and private organisations' (Der Derian, 59). The training exercises he observed for these 'Military Operations Other than War' changed designation so that they became simulations of 'Operations Other than War' and, ultimately, 'Stability Operations' (58). Der Derian captures the ambiguity of the nature of the operations being simulated:

> In other words, the 'White Paper' [outlining the purpose and nature of these training simulations] was this year's model for the high-tech, post-cold war simulations and train-ing exercises that would prepare U.S. Armed Forces for pre-peacekeeping noninterven-tions into those postimperial spaces where once- and wannabe-states were engaged in postwar warring (59).

The further into the era of the 'post-cold war' the more difficult it becomes to designate un-ambiguously any military operations as war (or 'postwar warring') in the traditional strate-gico-political sense of this concept. The relative clarity of the distinction between absolute, total nuclear conflict (as the ultimate form of war that monopolises the category of war) and other 'limited' conflicts fades from view.

In the terms of the PEOSTRI web logo, simulation, having overtaken 'all but war', can-not be stopped there. This would suggest that simulation has transformed 'real' war just as it has transformed the 'real' of economics, politics, education, entertainment and cultural prac-tice in general. Indeed, PEOSTRI have added an official motto to their web site presence that seems to 'overrule' the message of its web logo: 'Putting the Power of Simulation in the Hands of our Warfighters!' If simulation can become a weapon, then it must participate in war and can no longer name what remains definitively excluded from it.

In the contradictory rhetoric of the USA military's agency for the development of digital simulation, then, can be found a parallel to *Avalon's* ambivalent staging of an indetermining of reality (war) and simulation. As technology, simulation is another powerful advanced in-strumentality capable of being 'weaponised' in the logistical mobilisation of all resources for the war effort. As a sphere of experience or activity, it is maintained on the margins of war's singular authenticity. At least, that is the hope of the contradictory logic of the PEOSTRI site's self-representation of its raison d'etre as a simulation development bureaucracy.

Simulation, Mnemotechnics and Experience

The key issue here, as in *Avalon*, concerns the relationship between two dimensions of simu-lation: its status as a set of techniques and digital technologies for use in the real world, on

the one hand, and on the other, as a liminal experience that, via its interactive characteristics, one can be said in a sense to 'really' have. The efforts in game studies and other areas of new media research to distinguish simulation from other kinds of mediated experience turn on this distinction. Contrasts between simulation and narrative-based media such as film and literature in their conventional manifestations represent much of this work, along with efforts to subsume the former under a revamped characterisation of the latter (Aarseth 2004, Frasca 2004, Ryan 2004, Jenkins 2006). I think that an analysis of the difference between simulated experience and the experience of narrative is indeed the most relevant means of evaluating the impacts on historical and therefore critical interpretation that I foreshadowed in the account of *Avalon* above. But before developing that analysis I want to address the assumption subtending the implicit distinction between real as opposed to mediated (unreal) experience that lurks beneath the PEOSTRI's web logo and *Avalon*'s discourse on virtual *versus* real reality.

Bernard Stiegler's (1996) concept of mnemotechnics is invaluable here for two reasons. Firstly, it helps explain how experience can never be taken as something that is had independently of techniques and technologies of one kind or another. Human being is technical being. Our technicity distinguishes us from other kinds of being even if we can never be completely opposed to animal being. 'Technicity' is characterised by the fact that our technical artefacts effectively carry forward experiences and knowledge from a past that we have not ourselves lived. Every tool, cup, spear, garment, building, and so forth, is an exterior memory on the basis of which culture and ethnicity form, reproduce and evolve. Specific tools and techniques, based on this characteristic of all artefactuality, and dedicated to this task of recording and preserving experience are what Stiegler calls 'mnemotechnics', from carvings and sculpture, to imaging, graphic inscription and printing, to photography, cinema, video and digital communications.

The significance of this for our discussion – and this is the second reason Stiegler's concept helps us approach the simulation versus experience theme with a more critically productive orientation – has to do with the way that mnemotechnical forms prescribe what can be experienced by an individual but cannot completely determine it. A mnemotechnical work, such as a film or a videogame, emerges from a selective process of (re)construction that is not equal to real experience. These mnemotechnical forms, however, condition experience, have always already conditioned it inasmuch as people grow into an established culture of mnemotechnical traditions (folk and fairytales, religious, musical, literary, and audiovisual traditions of 'classics', and so on). These cultural coordinates are the conditions of possibility for experience in general, which is never therefore specific ethnically and historically. A pure opposition between simulation and experience is, in this view, untenable as such.

It is a question of distinguishing simulation from lived experience, and simulation from other mnemotechnical forms, without posing these questions in terms of an unequivocal opposition. The complication of the relation between simulation and the real needs to be understood then, not as a radically new development through which a new representational and interactive media form has suddenly uprooted the ground of the real in some unprecedented metaphysical rupture. Instead, the novelty of the contemporary era of simulation should be approached as a shift in the prevailing relations between mnemotechnical forms and the ex-

perience they condition by selectively reproducing the archive of its past occurrence and pro-jectively anticipating its future course.

What is it that simulation brings to this dynamic of life and its mnemotechnical condi-tions? To understand simulation's influence over 'all but war' and even war itself, we must clarify its specific mode of recording of the real. The contrast with narrative is the most per-tinent means for articulating this specificity, given the influence of mainstream narrative forms such as cinema, the novel and fictional forms in television, comics, and so on. Stories represent experience inasmuch as they record a particular selection, evaluation and therefore judgment of experience that arises from a particular individual (or individuals), in a particular moment of cultural becoming. The narrative mnemotechnical mode produces a work that in turn produces questions about its truthfulness to the way things were, and are in the world of the reader's experience. This experience is prefigured, as Paul Ricoeur has it, through a life-time of narrative entailments (1984, 54). The questions about the story concern the merit of its interpretation of experience, questions which involve the work in a process of comparison with and potential reappraisal of the reader's existing historical and cultural coordinates. In other words, these questions engage the readers/receivers with their future by tasking them with the challenge of determining and legitimating their historical and cultural criteria of evaluation.

Understanding the narrative work and being certain of one's judgment about its interpre-tation of experience means knowing how to take its meaning today. In other words, it is about knowing whether or not to rethink one's past interpretations, decisions, actions, and anticipating, therefore, how to think and act in the future. That is, in reading a story, the reader is always engaged in a process of (re)legitimation, one that is directed both at the self and the text in their mutual co-implication. Legitimation is, as Derrida (2002) has argued so decisively, a performative act that animates every interpretation precisely as this potential to retroactively evaluate the past from a future present.

With simulation, experience is not recorded in the same manner as in a narrative. A simu-lation is produced through a process of modelling. To paraphrase Gonzalo Frasca, simulation produces a model that is the reduction of a more complex system into a less complex system designed to operate for a particular purpose (Frasca 2003, 233). This purpose dictates how the simulation is evaluated in its design phase, the phase wherein the modelling of experience – either mediated or actual or, in fact, always both – is accomplished. In his influential work in industry circles on designing computer simulations, Robert G. Sargent describes this evaluation process as having three stages of Validation, Verification and Accreditation of the model (Sargent 1998). Elaborating on Sargent's description of this process, Roger Smith states:

> For the purposes of VV& A the simulation development process is divided into the prob-lem space, conceptual model, and software model with definite transitions and quality evaluations between these stages…. Validation is the process of determining that the conceptual model reflects the aspects of the problem space that need to be addressed and does so such that the requirements of the study can be met. Validation is also used to de-termine whether the operations of the final software model are consistent with the real world, usually through experimentation and comparison with a known data set. Verifica-

tion is the process of determining that the software model accurately reflects the concep-
tual model. Accreditation is the official acceptance of the software model for a specified
purpose. A software model accredited for one purpose may not be acceptable for another,
though it is no less valid based on its original design (Smith 1999, 10).

Questions of truthfulness, legitimacy and significance posed by an 'accredited' simulation
can only concern the fitness of the simulation 'for a specified purpose'. This purpose will re-
volve around study of a defined 'problem space' within 'the real world', study which would
take the form of what Espen Aarseth calls an 'ergodic' engagement with the simulation in-
tended to result in the discovery of possible solutions ('epiphanies') that would eliminate the
problem ('aporia') in the 'problem space' (Aarseth 1999).

At the serious (rather than entertainment) end of the simulation business of military-
industrial, economico-logistic and related applications, these hypothetical solutions would be
tested in the real world with a view to obviating the need for any future reformulation of the
problem space.

The key point for our discussion is that the design of a computer simulation effectively
preempts the questioning of the significance and legitimacy of its record of experience. That
which narrative works generate as an integral part of the dynamics of their reception is not a
designed outcome of simulation in the commercial mainstream. These questions have been
posed and answered in advance in the design phase of the simulation. The answers inhere in
the model as schematic representation of the 'problem space', itself a schema of 'the real
world' that poses the problem in response to which the simulation has been produced. A
simulation is, therefore, a system that must foreclose the question of the nature and legiti-
macy of its reproduction of experience before it can function effectively as a problem-solving
technics. The 'validation' of the conceptual model must be concluded before the verification
or accreditation stages of design can be finished. An accredited simulation will elicit, as the
core of its 'reception' by the user, an implicit affirmation of its conceptual model signalled
by his/her effortful engagement in the simulation's software model of the problem space.

As many cultural and media theorists have argued, narrative forms can and, in main-
stream audiovisual culture, routinely do construct interpretations of experience that attempt
to preempt questioning of their legitimacy. Indeed, the 'mainstream' could be understood as
a preemptive force constituted by the cumulative effect of the coordination and coincidence
of cultural and media works sharing similar interpretations. Here we are in the terrain of
theories of hegemonic cultural production, ideological apparatuses, dominant and preferred
readings, and so forth. Computer simulation, and computer games as simulations, can and
have been incorporated in readings of culture arising from this terrain as the most recent ex-
amples of the reproduction of dominant cultural values in mainstream media (King and
Krzywinska 2006). This could miss, however, the crucial aspect of the simulation form we
are concerned with here.

Ted Friedman captures this aspect effectively in a discussion of computer games as simu-
lations (2005). He argues that in a simulation game, avatar or character identification is less
fundamental than a mental identification with the computer program running the world and
staging the interactions within it. This process of internalisation is viewed by Friedman as
intrinsically cybernetic (2005). The constant feedback between player and simulation is the

core mechanism through which 'the line demarcating the end of the player's consciousness and the beginning of the computer's world blurs' (Friedman, 138). In realtime games such as that imagined in *Avalon*'s dystopian back-to-the-future Poland, the player's engagement in the speedrace of information processing is a commitment to thinking 'like a computer' at the speed of a computer or, at least, in response to the speed at which the computer can calculate the responses of the simulation to the player's input. That wartime is the most apt evocation of this cybernetic speed race is no coincidence as Peter Galison's account of the birth of this ur-discipline of pure war in the totally mobilised MIT Radiation Lab can attest (Galison 1994).

Conclusion: *Avalon* the Simulation

Avalon is a film that works over this difficult terrain where narrative logics and simulational logistics contest the cultural processing of experience. Its narrative temporal schema in which wartime, post-war and hyperrealist Polands blur their epistemological status in the film in a paradoxical chronology plays out against the intensive spectacle of the real-time gameplay in the simulated battle space. In the film, gameplay is the future opiate of the masses because of its ability to capture the attention of players by absorbing them in the challenge of attaining mastery, of and in the present moment of gametime, over the possible futures the game models affords. If serious goals such as training and weapons and tactics testing provide the rationale of the military simulation industry, *Avalon* points to the affinity which nourishes in no small way the military-entertainment complex. What is 'entertaining' today is a pre-emptive strike on complexity, spatial and temporal 'distance', in short the anxieties of global real-time connectivity. The strike is enabled by the operational reductions afforded in simulational modelling. The entertainment is often delivered to the player through his/her qualification to deliver an explosive, hi-tech combat performance. To its critical credit, *Avalon* portrays this payoff in a curiously decelerated slow motion fashion, a treatment that relates it in tempo to the depiction of life in the dull and dreary urban reality of the game's players. As Ingram and Reisenleitner point out, in both their restricted colour palette and tempo, the sequences of game play tend to level out the virtual-real distinction and provide a more disenchanted vision of the value of the game as 'escape' (Ingram and Reisenleitner 2006, 137).

Our reliance on Stiegler's insights concerning the relation between mnemotechnics and experience leads us to argue that the largescale adoption of the simulation form in contemporary audiovisual culture contributes in a not insignificant manner to the disorienting dynamics of globalising, post-Cold War technoculture. Humans participate in a technically conditioned dynamic of transformative inheritance through selective reproduction of the artifacts and mnemotechnical archives of recorded experience (Stiegler, 159). The individuation of ethnocultural groupings as well as of the individuals within them is the result and record of this process of selective reproduction. The preemption of interpretative engagement with the simulation's selective modeling of experience tends to deter its functioning as a mnemotechnical form *per se*. This is because mnemotechnics do not simply make the past available as some inert cultural essence, but make possible the reinvention of the past through the possibility of performative counter interpretations of the mnemotechnical archive. At both an individual and collective level, the past endures on the basis of the substrate of objects, docu-

ments and other records that persist after the lived experience that was in one way or another their origin. This is why the reinvention of the past is the possibility of the reinvention of the future programmed in the past *as given artefactually,* that is, culturally and historically. The pre-programming of interpretation necessary to simulation – at least in its predominant, military-inspired, instrumental form – tends to close off this possibility.

Avalon's rehashing and jumbled re-sequencing of Polish history and culture (itself reductively standing in for the Eastern Bloc) evokes the narrative 'cost' as it were of the instrumental, selective character of simulational modelling. One could say that this is the material structure-or unravelling structure – of the film's techno-metaphysical narrative of reality and virtuality. As a narrative treatment of the topic of the technoculture of militainment, *Avalon* tends to suffer from this simulational treatment by amounting to a somewhat facile replaying of postmodern epistemological uncertainty. The character arc of the protagonist, Ash, realised in her pursuit of a secret cult of quasi-mystic hackers, is toward a personal, spiritual transcendence to be found beyond her world, in which a disenchanted reality is artificially sustained through a form of virtual life-support provided by the game's illusion of meaningful agency.

The form-content dynamic is nonetheless the film's most intriguing and critically engaging aspect. It stages the diffusion of war into peacetime evoked in Virilio's notion of pure war in its imitation of the performative violence of the simulational modelling process. In this way, *Avalon's* vague sentiment of a generalised disorientation toward cultural and historical existence regains a kind of critical, historical dimension.

Avalon

Japan/Poland, 2001, 107 min.
Director: Mamoru Oshii
Screenplay: Kazunori Ito
Producers: Tetsu Kayama, Naoyuki Sakagami, Toru Shiobara, Shigeru Watanabe
Cinematographer: Grzegorz Kedzierski
Music: Kenji Kawai
Cast: Malgorzata Foremniak, Wladyslaw Kowalski, Jerzy Gudejko, Dariusz Biskupski, Bartlomiej Swiderski, Katarzyna Bargielowska, Alicja Sapryk, Michal Breitenwald, Zuzanna Kasz, Adam Szyszkowski, Krzysztof Szczerbinkski, Marek Stawinski, Jaroslaw Budnik, Andrzej Debski

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