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Norn Attacks and Marine Doom

"Modelling reality to get reality" (Toby Simpson)¹

This paper examines two forms of death in virtual worlds. In light of the possibility of creating artificial life in a computer processor, the question arises as to whether a phenomenon like death is even a matter of significance in a binary world that appears to be infinite and eternal, and what relationship exists between these death phenomena and the real thing. We can differentiate between two forms of immaterial death: artificial death as a programmed parameter, and self-emergent death in accordance with the biological model.

On the Net, there is no art of this kind (yet): it has had no time to develop a notion of the Other, the vanishing point of which would be Death. The model for Net Culture is life ...²

Not only the Internet but also the other digital media present themselves as eternal phenomena that know no end. The apologists for new media worlds all too readily put forth the myth of the permanent retrievability of all information once it has been put into digital form. Inherent in this is the danger that information that is only a few years old will become unreadable due to the rapid revision of systems. The utopia of digital immortality of human beings, as "mind [...] uploaded into the Net," as John Perry Barlow formulated it, thus sees itself being confronted by "life-threatening" hazards like system crashes or upgrades. Death lurks in program structures.

Artificial worlds and their inhabitants demand the construction of a virtual death. The implementation of transitoriness—to the extent that it does not develop self-emergently—becomes a pressing necessity due to the potentially infinite metamorphoses and metastasis-like growths into other states and forms.

The constructional principle of forms of virtual death represents the highly regimented artificial worlds of computer games and simulations. They are based on the theorem of double death put forth by Lacan, as Žižek has shown.³ Virtual life survives multiple deaths until the arrival of absolute death: the end of the game. This can be deferred by means of additional life won during the course of the game. The artificial death encountered in video games is characterized by manifold stages and multiple forms of death.

Moreover, the players can repeatedly resurrect the dead in a physically intact form—they possess a sublime body fully in the sense of de Sade's phantasma:

"You'll be able to resurrect the digital dead and kill them again."⁴ This resurrected flesh shows no traces of abuse stemming from "real" life, as is the case of the undead zombie in film.⁵ This figure returns over and over again, with its horribly mangled body as reference to the injustice that has been done to him, until the debt of the living has been discharged and the dead can rest in peace. Artificial death, on the other hand, creates a *tabula rasa* each time, and everything can start again from the very beginning.

Artificial Worlds and Their Living Inhabitants

"The greatest thing about computing is not overhauling the real world to make it work properly—writing can do that too—but rather that it is capable of projecting forth sensorily perceptible worlds."⁶

Artificial life comes about on the basis of natural laws. Two directions have emerged in the design of artificial life: the simulation of natural life forms, inherent in which is self-emergent death, and the fictional creation of artificial worlds with their artificially-implemented death by means of strictly defined parameters.

Larry Yaeger's *Polyworld*⁷ is an ecological simulator whose creatures are designated by Yaeger as "dervishes" or "edgerunners" depending upon their behavior and form of movement. The simple physiologies of the beings inhabiting this artificial cosmos correspond to elementary stereometric forms. Visual differences are to be found only in the various colors and in whether or not the being constitutes a complete living creature or a fragmentary dead one decomposed to the status of a unit of nutrition.

Certain modes of behavior of *Polyworld* beings and phenomena like virtual death have come about over the course of machine evolution without having been previously programmed. The creatures die due to biological necessity because their nutritional resources are inadequate, because they have been vanquished by opponents in the struggle to obtain food, or because they have lost the battle for territory and been plunged over the edge of the disk-shaped world. Another virtual world is Tom Ray's *Tierra* model. This world is populated by a harmless type of virus in the form of long, narrow strips in a variety of colors. They take shape on the basis of genetic algorithms and undergo a process of evolutionary development. Here, an administrative authority responsible for killing has been set up by the programmer: if copying errors lead to mutations, artificial death ensues. The *reaper*—represented by a skull-and-crossbones—eliminates old, defective programs.

In the installations *A-Volve* and *Interactive Plant Growing* by Laurent Mignonneau and Christina Sommerer, death is brought into play as a necessary *tabula rasa*. It is the zero-point, the shutdown of interactive life-processes, the point at which the initial state can be re-established.

Myron Krüger's *Critter* installation also contains an artificial being that follows on a projection surface the observer who has been embossed by means of chromakey technology.⁸ In this world, death and destruction were actually not foreseen as parameters; however, the behavior of young male users, whose overriding need was to destroy the friendly artificial creature, forced Myron Krüger to program new options into the installation: a user can squash the Critter, it bursts, only to be resurrected a moment later.⁹ Critter also becomes a deathless, sublime creature.

Scientific findings gained from biological simulators have been most fully and consistently integrated in the commercial field of video games. They are more complex and more concrete than biological simulators in that they show which aesthetic forms are possible and how quickly the artificial forms become economically-utilizable entities.

Creatures, a game developed in 1996 by Stephen Grand from the firm CyberLife, makes possible the breeding of individual beings and generations, all the way to an entire population of furry little creatures called "Norns." They possess a digital DNA and basically go through all stages of human development. Each develops an individual biography including infancy, childhood and youth when they must be raised and cared for, and finally adulthood. They

reproduce sexually, they age and die. To experience a complete life cycle, players must spend approximately 18 hours with one of their Norns until the creature succumbs to the infirmities of old age. To fittingly memorialize the deceased Norns, a funeral set is provided—the icon is a gravestone with the inscription "RIP"—along with a burial plot in the Internet.

The developmental stages of these artificial creatures can be captured by means of a virtual camera and pasted into a virtual family album. Moreover, this form of virtual life can be saved in memory, imported into the Internet, and thus be placed into a wide variety of contexts. *Creatures* is a game; that is to say, the artificial world can take a break if the computer processor is turned off.

A second version of the game *Creatures* was brought out in Fall 1998. Along with improved graphics and a user-friendlier interface, it offers a large-scale terrain named Albia, the virtual environment of the Norns, as well as more objects and machines. Beings that already exist can be transferred to the new world; the new Norns have new genotypes. Individual body parts such as the tail are movable, and there is a wider variety of facial expressions. They are endowed with organs such as lungs, so that if a Norn dies as a result of a disease, the cause of death can be more readily assessed. Without body and organs, the medical-analytical view is unable to recognize causes.¹⁰ An immaterial body is actually an exterior surface that cannot actually provide a glimpse into its interior. This is precisely what is now being artificially constructed.

Cemetery of the Cuddly Creatures: The Norns as Fighter Pilots

Creatures contains beings displaying "emergent behavior" which, in contrast to primitive, permanent forms like the Tamagotchi, can develop a multi-faceted character. Even the game's first version presented a species with the capability of learning and that can be trained to perform any task.

Creatures is so flexibly programmed that the architecture can be expanded and systems can be repeatedly introduced or exchanged without having to rewrite the entire program. It has been the players above all who have taken advantage of this feature: they have genetically engineered the Norns, and have inserted objects or new machines.

There are "cheats" (tricks) which precisely describe how artificial immortality can be introduced through the manipulation of three genes (#001 decay rate at birth, #170 age, #173 death receptor).

By means of the genetic code, the programmer can breed the most highly resistant Norns. The first generations also contained deformed creatures or individuals who died of illnesses such as violent shivering fits. The first version designed for a mass market, however, was programmed to preclude deformities. The unpleasant side-effects of a biological simulation in the form of a game were deemed unsuitable to the market and eliminated. Death as a result of old age, an error in the selection of food (poison mushrooms) or a biological enemy (the Grendels) is permitted, but not death due to genetic mutations or aggressive acts within the same species. The user can also exert psychic violence, in that he neglects the Norns. Failing to interact with the Norns or raising them improperly causes them to waste away and die.

The Norns use machines as means of transportation (submarines, elevators) or learning (computers). Their tremendous enthusiasm for technology is the sign of an artificial species

capable of higher development; of course, they can operate both analog and digital machines, though without actually controlling them.



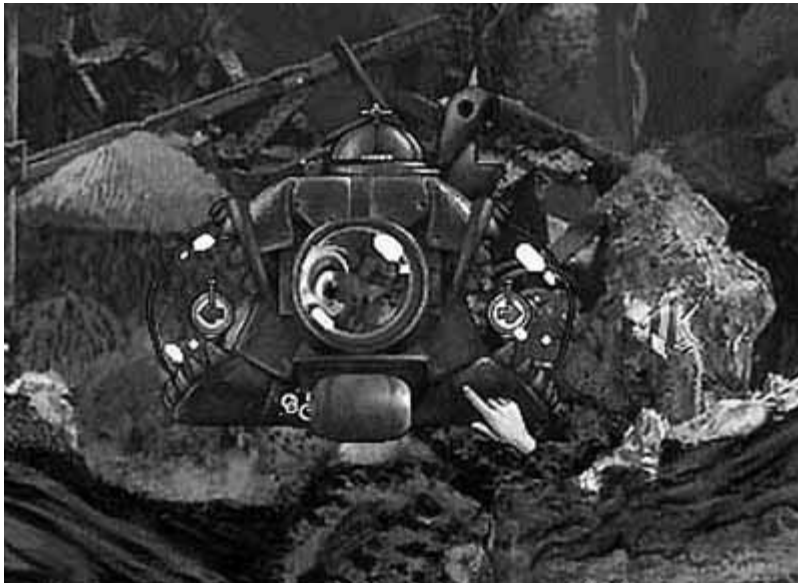
Now, on commission from the British Ministry of Defense (Bedford, Dera Research Institute), the "cute" little characters are being trained as Eurofighter pilots. The goal of this vision is "to put human intelligence inside computers by the year 2020." The concept of unmanned armed vehicles (UAV) is being tested with the Norns. The term "unmanned" is not synonymous with "not live"; it is just that, in this case, there are no human beings piloting the Eurofighter.

This commercial application was selected because it contains the first artificial species capable of learning. Only the "born" flyers are bred further; the genes of those who crash are eliminated. It is only after 400 generations that the Norns master aviation. The death of the virtual test pilots means nothing. They are immaterial victims of military progress. Artificial life (still) has no needs of its own; all it wants to do is to survive combat. Hunger and thirst are trained out of it. Furthermore, it is capable of tolerating stress, and can withstand

tremendous acceleration without injury, since it possesses no body and its cyberlife-brain has been trained exclusively to carry out this task.

On the other hand, game players grow quite fond of the Norns due to their representativeness. The emotional attachment is strengthened by the long duration of the game, and manifests itself in phenomena such as naming, graphic fixation on some particular stage of an individual creature's development, and arrangement of its funeral. What takes place here is a reversal of visual representation in the form of a transformation of hard evolutionary facts. For the game, the representation is constructed in such a way as to be emotionally appealing. The Norns are the visual embodiment of charm. They move about awkwardly in their environment Albia and are quick to learn. Norns are the antithesis of the ugly, uneducated Grendels—their enemies, an aggressive species that lives outside of Albia. (This can be revised to some extent by means of intervention in the program.)

Binary code is flexible and can assume any visual form. The creators of artificial life also employ this representation for Killer-Norns, who will perhaps someday be in the position to extinguish real life.



Toby Simpson's remark "modelling reality to get reality" thus assumes a new dimension: modelled virtual reality becomes a reality of death and destruction. For the first time, artificial life has its "finger" on the trigger of deadly weapons. This lethal "smartness" of artificial life that leads an existence as a purely airborne being in an unmanned flying object constitutes the achievement of independence of a warlike form of killing. After all, the Pilot-Norns are capable of learning within their own "biotope" and develop capabilities which lie outside of the programmed structures—which is by no means astounding in the case of an artificial life form with a genetic code. The Norns keep the Eurofighter aloft in such an individualistic way that the programmers are now not even capable of explaining it any more on the basis of an analysis of the software.

The term "friendly fire" takes on an insidious new significance when Norns—juvenile homunculi and actually just a fortuitous visualization of digital processes—operate real aircraft and are in the position to extinguish real lives. Death is no longer depicted as a hideous skeleton, but rather as a "cute" cuddly creature. They are of course invisible to a potential enemy, to whom this is a remote-controlled guided missile without any form of life, since the enemy is incapable of perceiving it.

These Pilot-Norns are one further step in the direction of the fulfillment of the age-old military dream of replacing imperfect, mortal human warriors with an artificial species. They are perfect jigsaw puzzle pieces in constructions like the 21stCenturyLandwarrior (21CLW), the Pitman of the 1980s, robotic weapons and the idea of an "augmented reality" (Mark Weiser), and of conflicts decided on artificial battlefields.

Dying in Virtual Worlds: Marine Doom

Up to the end of the '80s, military simulators—the American SIMNET and applications like flight simulators—were considered to be the genesis of commercial video games. Here, war shifted into a virtual intermediate world cordoned off from reality, a world in which virtual death is preinstalled by the manufacturer. Here, the symbolic death of the opponent in combat occurs before biological death because it is first determined on the monitors of strategic headquarters in the virtual world.



Besides these élite strategy simulators for the training of officers, simulations which are, indeed, modified versions of commercially-available action games like *Doom II* are now being placed into service for the training of foot soldiers. The military version entitled *Marine Doom* can be downloaded without restriction. The single condition to be able to play is the installation of the commercial product *Doom 1.9*. This recourse to commercial products takes place due to cost considerations, since the real training camps (combat towns) are filled to capacity and new ones are too costly.

The Marine Corps Modelling Simulation Management Office in Quantico, Virginia conducts a systematic evaluation of commercially-available computer games and visualization software—to generate realistic scenarios, for instance. Besides ID’s *Doom 1.9* which, as *Marine Doom*, has been adapted to meet military specifications, the Navy is testing a flight simulator entitled *JetFighter III*. The game makes available two types of aircraft and real scenarios such as China, Korea, Japan, Russia, Alaska, Cuba, Argentina, Chile and Turkey. It is possible to run 90 missions; time-of-day and conditions such as fog, smoke and fire can be set. Approval has also been granted to the *M1A2 Abrahams Tank Simulation*, *Flight Unlimited II*, a flight simulator for acrobatic aerial maneuvers, and *Comanche Maximum Overkill*, a helicopter simulation.





Among the 3-D animation software being tested is *3-D Studio Max*. The evaluation especially emphasized the destructive effects for animated objects: "... effects include spawning on death and collision, trailing sparks, fluid bubble motion."
(http://www.tec.army.mil/TD/tvd/survey/3D_Studio_MAX.html)

The *MetaVirtual Reality Scene Generator* enables users to construct games for multi-player networks with "event based texture animations for explosions, dynamic weather" on a terrain corresponding to the Fort Benning Mout and comprising an area of 24 x 24 kilometers.
(<http://www.tec.army.mil/TD/tvd/survey/MetaVRSG.html>)

The category of action games—"deathmatches" as they are appropriately titled—makes a multi-player mode available and is particularly well-suited to the tactical simulation of combat. With the possibility of multi-player mode, the banding together of previously isolated players in combat groups and units of their own choosing (e.g. the Quake Clans) has come about on its own. This global, telepresent, network-linked mode of playing with each other and not necessarily against each other has been adopted by the military.

For this reason, action games like *Doom* recommend themselves to aid the formation of social skills. Military developers argue that life-saving team spirit ought to be trained in artificial scenarios, so that it does not have to be formed under the existential pressure of war and the conditions of real combat in which errors can be irreversible.

The military teams now play in an Intranet under their control which is not accessible by the general public. This is of minor significance, however, since the structural and visual modifications undertaken by the military are of a rather cosmetic nature. Realistic bunkers, terrains and trenches fenced off by barbed wire have been introduced. In place of monsters of various different types—i.e. with a variety of fighting capabilities—recruits now confront enemy

and friendly troops in uniform. Their basic model is a "G.I. Joe" action figure that has been scanned in with a variety of different uniforms. Their arsenal is limited to three types of weapons in current use (M16A1 rifle, M-249 machine gun, M-67 grenade launcher), and their fire is based on laws of ballistics.

The Marines playing this game are grouped into squads of four individuals, which is thus a realistic representation of the smallest fighting unit. They "play" on their PCs in a room equipped with loudspeakers playing sounds that imitate the noise of a battlefield and communicating the commands of their superior who, as an observer, has an oversight card and can stop the course of events at any time. Each player has his own perspective of the combat situation. He is assigned a mission via E-mail, as well as a description of who is a friend and who is a foe. It is possible to conduct exercises of special missions such as the liberation of an embassy—in this case, original blueprints of a number of different embassy compounds are made available. (http://www.tec.army.mil/TD/tvd/survey/Marine_Doom.html)

The object of *Doom* is to maim, to kill, to rout, to ravage. You succeed by obliteration, and the greatest concentration of violence yields the best result. In other words, the high octane violence that draws young and old alike to many computer games is exactly what professional warriors should be wary of.¹¹

The original point of the game—helter-skelter slaughter of anything that moves and does not have a human form—makes no sense for the military application. *Marine Doom* provides a totally different type of training: the identification of ally and enemy, not just brainlessly blasting away. The avoidance of friendly fire is one of the training tasks.

The commercial version has been customized with combat realism. In the normal version of *Doom*, a player can stock up on ammunition by collecting it from widely-dispersed storage depots; in *Marine Doom*, there is only one arsenal, and players have just as much time available to load their weapons as they would have in actual combat. Unique features of binary games, such as the use of "medicine packs" to restore the fitness of those who have been injured in attacks by monsters, have been done away with in the *Marine Doom* version. A player can be wounded only once; the second time, he loses his life. Similarly, he cannot use points to recuperate from an injury or to regain a higher percentage of health.

The sublime body of the original video game has been terminated. The finiteness of artificial life as a simulation of real life must be programmed into processual virtual worlds. *Marine Doom* does not feature a reset button to resurrect the fallen soldier and redeploy him in the ongoing theater of war.

The development of interdependence of game-playing and warfare proceeds in two stages: first, an abstracted model of individual combat is transposed into the sphere of game-playing; in a second step, the model of artificial warfare represented here becomes a measure for real combat.

Death and Immortality of Artificial Life

Artificial and natural life are edging closer and closer together. The cloning of mammals and the obsession with the perfect copy are leading to the development of life on the primitive level of identical cellular reproduction.¹² At the moment, artificial life is on the same level of primitive reproduction. But from this point of departure, evolutionary leaps, forms of gender differentiation and of the death of artificial species have made themselves evident. Thus, these artificial worlds seem to be developing or reconstructing something new, which could be lost in reality in the future.

Death as a necessary regulator is being introduced as artificial death, as the "reaper" function; as emergent death, it is developing in evolutionary fashion. Artificial life is thus becoming a sort of digital zoo in which things that have been destroyed in real life are preserved. It serves the reconstruction of evolution, the emergence of life and behavior, and the reconstruction of various different forms of death and of immortality. Death, violence, transience and eternity exist as projections in these virtual worlds.

Even in virtual worlds, players are beginning to challenge the necessity of biological death and to revamp the structures of the game. In *Creatures*, they are outfitting their beings with the so-called "Highlander gene" to endow it with immortality, although the artificial world then suffers from overpopulation. The undead cannot be visually differentiated; even the undead Norns retain their friendly appearance. They represent the first species of vampires that simply lives on without having fallen victim to a symbolic punishment of the community and therefore having to return over and over again. It is thus evident that virtual worlds not only preserve forms and rituals of death, but also bring forth something that is not (yet) possible in reality—namely, physical immortality.

On one hand, artificial life rediscovers death as an important category of life; on the other hand, it threatens this very same human life with aggressive action and violent death in military applications. Artificial life has succeeded in making the leap to the reconstruction of human violence—from evolutionary aggression that promoted survival to premeditated aggressive action reinforced by machinery. With the advent of Pilot-Norns, it has lost its innocence.

Binary games are neutral in and of themselves; they possess open structures that can be fundamentally revised by the user. This enables them to be adapted for military purposes. *Creatures* and *Marine Doom* show that the process of simulation in the form of reality models is becoming a two-edged sword. The models which have been crystallized into the form of games are now being projected back into real life and are influencing real organizational forms.

Nevertheless, the various game versions differ in key respects. In *Marine Doom*, the unbridled, wild violence that is required for survival is transformed into a "civilized," ordered violence. As a result of the modifications it has undergone, *Marine Doom* becomes a simulated reality, whereas the commercial version, with its sublime bodies and the possibility of multi-stage death, remains a game.

Furthermore, it is precisely the ecstatic, brainless blasting away with an entire arsenal of deadly weapons that completely sets a game off from the reality of warfare and military attack. The video game involves the danger of friendly fire only in multi-player mode.

The Marines can no longer afford to develop their own software which even comes close to commercial products with respect to the standard of quality and the reality of graphic realization. Thus, the reversal of the original interdependence of the military complex and the electronic entertainment industry is culminating in the assumption of a model function on the part of developments in entertainment electronics. With the purchase of game-playing strategies out of the inventory of the global cultural industry, the military complex loses its hegemonial position in the field of electronics and software. The situation that Kittler¹³ analyzed as the position of predominance of the military in the field of technical-medial development is thus reversed in this case. The violence of warfare legitimized by the authority of a sovereign state now has its origin in commercial products—in games. The Pentagon is

forced to train certain military capabilities on the basis of prescribed program structures that permit only variations and which are also available to civilian players.

With the artificial world as an avant-garde manifestation in which the culture industry prescribes program structures to the military complex and permits it only superficial visual variations, entertainment has assumed a deadly character.

"Future adversaries ... may use their last breaths to curse the commercial game software industry."¹⁴

¹ David Jenkins Interview with Toby Simpson, May 22, 1998, Vol.2 Issue 20. In: Gamasutra (www.gamasutra.com/features/game_design/19980522/simpson-toby_02.htm)

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