Becoming Zerg. The machinic embodiment of the *StarCraft* player

This paper uses the example of playing *StarCraft* to question the identificatory conception of player-avatar relations and to develop an alternative theoretical approach for framing this fundamental dimension of game play. Strategy games like *StarCraft* undermine the notion of identification because the player – in contrast to most action and adventure games – doesn't control just one figure in the game, but rather a multiplicity of agents that are also partially autonomous. The shifting between different game figures in a strategy game undermines the notion of an identificatory relationship between the player and a specific avatar. The argument of this paper is that a general theoretical description of player-avatar relations, able to take different game configurations – from single-figure to multiple-figure interaction – into account, can be built around a concept of *machinic embodiment* that draws upon phenomenological and post-structural approaches.

Three embodiments: Zerg, Terran and Protoss

In order to participate in a computer game, the player has to form an „embodiment relation" (Ihde 1990: 72–80; Butler 2007: 102–106) with her game figure(s). She needs to don a virtual embodiment, a second simulated skin (Butler 2010: 185–191) that allows her to perceive and act in the game world. This virtual embodiment is generated by the game's interface and encompasses the entire sphere in which the player unfolds her influence as well as the one in which she is affected by the actions of her opponents. In the case of strategy games this embodiment is multiple and decentralized. The focus of attention is not concentrated in a point, in the form of a central virtual protagonist but is spread out over the game world.

The *StarCraft* player's focus is only concentrated on her starting structure and five elementary workers in the beginning. Her first actions consist of sending the workers out to harvest resources in order to produce further figures. This expansion and production process continues throughout the game, so that in its most advanced stages the player's virtual embodiment encompasses over 200 agents that are distributed in the game world. The player's simulated decentralized self encompasses a multiplicity of semi-autonomous agents that is constantly growing, shrinking and being reconfigured. This distributed virtual embodiment is the medium that defines the player's fields of perception and action.

When *StarCraft* was first published in the spring of 1998 it stood out mainly because of its game play. It was the first real-time strategy game that offered three distinct species – the *Zerg*, the *Protoss* and the *Terran* – that all had a different *feel*, i.e. diverging game mechanics, which demanded specific tactics and strategies and encouraged different playing styles. The design of three incommensurable species was the result of a crossbreeding between games with symmetrical opposing sides, like *Warcraft* or *Chess*, and the three-way game *Scissors, Stone and Paper*. In short, the basic strategic scheme of *StarCraft* is built around triads: Unit A is superior to unit B, but inferior to unit C (unless it has, for example, Upgrade A1...).

There hadn't really been an approach like this in computer strategy games before. *Dune II* had introduced small differences between the *House of Artreides*, *House of Ordos* and *House of Harkonnen* – each could produce one unique unit and effect. But *StarCraft* was the first game in which all units, structures, effects, production paths, etc. – in short: entire mechanics – were unique to their specific species. Rough similarities can be drawn between certain units – for example the Protoss *stalker*, the Zerg *hydralisk* or the Terran *marine* insofar as they are all ground troops that can employ air and ground attacks. But they all have a different feel: they play differently and have diverging parameters, abilities, prerequisites, production times and development possibilities as well specific tactics to be used successfully.

Each of the 43 different units in the game is defined by production cost and duration; supply cost; speed and method of movement; modality and range of perception; visibility (cloak, burrow); composition (mechanic, biologic, psionic); health (amount, regeneration); armour, shields and vulnerabilities; size and mass (light/normal/massive); attack-number, -speed, -range, -dimension (ground/ air), -radius, -mode of dispersion (normal, straight line, splash, explosive), and -strength; and, last but not least, any given special abilities along with the energy needed to use them. Additionally, the different units offer exponentially larger unique strategic possibilities in combination, than they do alone.

As mentioned above, the three species don't only differ in the units they offer but in their entire game mechanic: Each has its own incommensurable mode of building, developing, supplying, moving, reconnoitring, expanding, attacking and defending. Different strategic possibilities emerge out of these species-specific incarnations. The following „thick description" (Geertz 1973) of these three embodiments will draw upon the semantics that the game designers put forward in the manuals and on the website to describe the functioning of the different species. This imaginary „co-text" (Beck 1997: 160) is not only a decorative covering for the symbolic program engine. It is rather a conceptual framework that allows one to grasp the game mechanics of Zerg, Protoss and Terran. This will be shown in the following, with regards to the basic base build-up and general population characteristics of the three species.

The Zerg have a solely biological composition and don't rely upon technology like the other two species. All Zerg agents, units as well as structures, are organic and form a gigantic living creature in their totality. The Zerg colony does not build its agents, but rather evolves them from *larvae* that are continuously being produced by the *hatchery*. This is the Zerg player's beginning structure and the only one that can be established upon normal terrain, because it produces its own nutrients. All other structures have to be evolved on the *creep* a carpet of nutrimental biomass that emanates from the hatchery and can only be enlarged by special means such as *creep colonies*. Thus the organisation of Zerg-production is much more centralized than that of the other two species. And while the creep gives the player insight into the portion of the map in which it exists it also makes her base visible to opponents.

The first possible metamorphosis that players have at their disposal is from larvae to *drones*. These units, in turn, can be used to harvest resources or can mutate further into rudimentary structures. These structures are not so much buildings as gigantic organs of the Zerg colony, which expand the gene pool that the player can tap into. With each structure new mutational possibilities open up. The Zerg mode of unit production is the fastest and cheapest of the three species – multiple larvae can be given the command to mutate at once and their cost is on average lower than comparable units of the other two species. The fundamental strategy inherent in the Zerg embodiment emerges from these two characteristics: mass production and situational adaptivity. The Zerg player has a quantitative superiority over other species in the course of the game, because her units can be produced faster and are cheaper than theirs. This also means that she has the potential to be the fastest when it comes to discarding a plan and developing a new strategy in order to adapt to a given situation. The main downside of the Zerg embodiment is that its units are on average the weakest, when compared with their equivalents. But, if Zerg agents are only wounded and not destroyed, they have the unique capability to regenerate themselves back to full health, due to their advanced biological composition.

StarCraft players need to manage three in-game resources in the course of playing: *minerals* and *vespene gas*, which are needed for the production of units and structures, and a species-specific supply resource that defines the possible size of the unit population. For the Zerg the latter is dependent upon the number of *overlords* – flying units that can produce temporary creep zones – that a player has produced which generate the control that she, as central Zerg-intelligence, needs to regulate her growing swarm.

The bases of the nomadic Terrans, which they build in a classic fashion, are more mobile than those of the Zerg or Protoss, and their technology is the most flexible because of its modularity. *SVCs*, basic workers that are produced in the *command central*, are used to construct buildings and have to stay dedicated to the task until it is completed. Afterwards, in contrast to the Zerg drones, they remain available to the player and can erect further structures, harvest resources or repair damaged buildings und mechanical units.

Terran are in the middle of Zerg and Protoss with regards to the survival rate of their units, of which they tend to produce fewer than the former, but more than the latter. The Terran buildings have their own energy source and are not dependent on external support like the Zerg creep. Thus they can be arranged more flexibly in the course of base construction and can, for example, be quickly built behind enemy lines. While Terran don't need support for the buildings, their troops need *supply depots* that dictate the size of the population. A further specificity of Terran structures is that all main buildings are mobile – they can lift off and slowly fly to a different place. The flipside of the flexible Terran technology is that it is highly improvised and therefore instable. If a structure is damaged to the point of burning it steadily falls apart if not repaired. But they *can* be repaired, just as Terran units can be healed by a *medivac*, as opposed to the agents of the other species.

The Protoss use the most advanced technology of the game, which is also the most expensive. Therefore they are much more conservative than the flexible Terrans or the adaptive Zerg. This characteristic also informs their narrative framing: Protoss warriors follow the *Tenets of Khala*, a rigid spritual path. And their culture as well as strategy is not very open to change. Because of the high cost of their units, Protoss produce the fewest of the three species. On the other hand their agents also the most robust of the game. They can't be repaired or healed like those of the Terran and don't regenerate like those of the Zerg. But Protoss agents are all surrounded by energy shields that deflect damage and recharge over time.

The Protoss structures aren't built on site like those of the Terran, nor do they result from the mutation of existing agents like those of the Zerg. Rather, they our constructed rapidly in factories, securely stowed away on another planet, and teleported to the desired site, which is signalled by a transplanetary antenna that is set up by a *probe* – the basic Protoss worker unit. After a signal has been established, the probe is free to pursue new activities, which allows for rapid base build-up – that is, *if* the necessary resources are available. A further prerequisite for the construction of all buildings is the access to a grid of psionic energy that is emanated from the beginning *nexus* – the beginning Protoss structure – and transmitted through *pylons* – energy-relays that also serve to dictate population size – in a circular field. This energy is needed for all other Protoss structures to function. Thus, the Protoss have less flexibility than the Terran in the construction of their bases, but are not a centralised as the Zerg.

It is not possible, within the scope of this paper to depict all of the difference between the three virtual embodiments of *StarCraft*, much less detail the multitude of units. Thus, it must be summarized here that even though they share rudimentary command and control configurations, they completely diverge otherwise – having different units, growth and expansion patterns, production costs and modalities, development paths, dependencies, reconnaissance and regeneration abilities as well as offensive and defensive capabilities.

Machinic embodiments

Learning to play a computer game goes hand in hand with an internalisation of the controls and the feel of the chosen virtual embodiment. In order to play, as mentioned above, the player needs to establish an embodied relationship with her game figure(s). She needs to grasp the multisensory-symbolic interface and incorporate the production, movement,

perception and action-modalities of all agents as well as their logical connections before a strategic plan can truly be conceived or implemented. This is not simply a cognitive task, but a physical process, as the achieved manual dexterity often decides over the success and failure of a strategy. With hours of practice, the player establishes a cybernetic coupling with the program code, a link between her body in front of the screen and her data body on the other side. She maps her agent-multiplicity onto her imaginary self-image; memorizes parameters, tech trees and audiovisual signatures of different game figures; imprints hotkeys and internalises the rhythm of production and destruction processes.

Jaron Lanier calls the malleability of the self-image that we can see in the high aptitude of computer game players for adapting to new virtual embodiments „homuncular flexibility" (Lanier 2006). The virtual embodiment is mapped onto the sensomotoric homunculus with the internalisation of the game mechanics. Hereby, the interface is transformed from a zone of seperation to one of transference. It turns into a medium, disappearing, as it becomes „*zuhanden*" (Heidegger 1993: 71–74), while the body scheme of the player expands to encompass her virtual incarnation.

As long as a game playing sequence is running well, the player's feeling of control grows. She receives real-time acoustic feedback on the success and failure of her actions and can forget herself in her active being-in-the-virtual-world. In short, she enters into the state of flow. In these intense play phases, her embodied knowledge takes over and her ego is suspended as her thinking and doing meld. The state of flow is paradox for the strategy game player. The suspension of the self-reflexive ego leads to a loss of the cognitive distance that is a key characteristic of the modern strategist (cf. Nohr/ Wiemar 2008). At the same time it unleashes a maximum of efficiency as is seen in the inhuman *actions per minutes* of professional players who are *in the zone*.

Ted Friedman compares the state of flow that he experienced during the playing of round-based games like *Civilization* with the processing of a computer. „The pleasure of computer games is entering into a computer-like mental state: in responding as automatically as the computer, processing information as effortlessly, replacing sentient cognition with the blank hum of computation." When the player has mastered the mechanics of a given embodiment, then she can enter into this state of flow in which one action harmoniously leads to another. Then the game runs like a well-oiled machine – as players describe it (Butler 2007: 73) – that is more than the sum of its multiple parts, a source of aesthetic pleasure for players. This sublime clockwork aesthetic feeds into the player's desire for perfection and wholeness.

Friedmans characterisation of playing *Civilization* as an inebriating experience is even truer for a real-time strategy game like *StarCraft*, with a game playing experience that is comparable to a meditation or a trance. The interactive light and sound patterns produce a transformation of consciousness, and the game belongs – as does computer game playing as a whole – in the genealogy of inebriation technologies. It implements older methods of changing neurochemistry and generating altered states of consciousness like rhythm, sensory overload and transgression. Adrenaline and cortisol is, for example, released, because of the heightened stress-level the game produces, just as dopamine is released because of the uncertainty of the game-playing situation.

It is difficult to describe the real rush of computer game playing, because the „sense of self" is fundamentally altered: „Flowing through a continuous series of decisions made almost automatically, hardly aware of the passage of time, you form a symbiotic circuit with the computer" (Friedman 1995). Friedman highlights the fact that the strategy player, in shifting between her different agents, doesn't so much identify with the single figures that she controls as with the process as a whole. The player thus, in this view, enters into an identificatory relationship with the actions of her agent-multiplicity and, in metonymical extension, with the game program as well as with the computer itself. But this fluid-procedural configuration of

self is not the same for different strategy games, not even for the different embodiments of a game like *StarCraft*. It differs, depending on how the different sub-processes are logically and rhythmically linked to each other, as we have shown above.

A more precise conception of the relationship between player and computer game figure(s) than that of identification can be formulated using the post-structural terminology of Gilles Deleuze and Félix Guattari: The interaction between the *StarCraft* player and her decentralized virtual embodiment can be characterized as a rhizomatic relation (2004b; Butler 2004: 115–116; Butler 2007: 207–217) that is formed along the visual, acoustic, haptic and symbolic dimensions of the interface. During the process of play, player and computer enter into a real process of becoming as heterogeneous participants, like wasp and orchid. The player *deconfigures* herself – suspends her everyday frame of reference – and *reconfigures* herself in the game world. At the same time, the computer deconfigures itself – projects the program code audiovisually – and reconfigures itself in the imagination and the body of the player.

With this theoretical frame, every agent that the player interacts with can be characterized as a „desiring-machine" – a psychological and technological machine that obeys „a binary law or set of rules governing associations: one machine is always coupled to another" (Deleuze/Guattari 2004a: 5). Every desiring-machine is part of a multiplicity of other desiring-machines that form an assemblage – an ensemble of heterogeneous elements. In the case of computer game playing this *machinic embodiment* is made up of physical as well as virtual elements: electrons-transistors-code-agents-screen-images-photons-eyes-loudspeakers-sounds-air-ears-receptors-neurotransmitters-muscles-hands-gestures-controls-icons etc.

In the rush of computer game playing, the perception and action processes of the player's virtual embodiment become a site of wish-investment. The appearance, the sound and the feel of her different agents become sources of pleasure – for example, the hissing of the Zerg hydralisk that lets the player's heart beat rise slightly before sending them into the fray. In the inebriating assemblage of the computer game player's machinic embodiment the dichotomy between consciousness and unconsciousness is suspended, because the latter is produced at the site where the former is pulled by desire (Deleuze/Guattari 2004b: 313). In the continuous flow of interactivity – the steady stream of feedback between the player's actions, the reactions of the computer to these actions, the reaction of the player to these reactions ect. – the border between the player's imagination and the game's symbolic mechanics is blurred.

The complexity of the *StarCraft* player's machinic embodiment grows exponentially in the course of a game playing session. She needs multitasking and micromanagement skills, in order to optimally harness the growing complexity of her embodiment and heighten her actions per minute. While strategy games, on the one hand, feed into and off of the desire for control, the mastery of the digital situation, on the other, is only temporary and always precarious. In certain game phases – especially in the beginning – the machinic embodiment of the player runs smoothly and in perfect order. This sublime state doesn't last long, though. As the game progresses, the ascension of chaos becomes more and more probable.

A game of *StarCraft* can be differentiated into three phases. The beginning is a series of ritualised gestures, in which each action is performed with maximum efficiency. The second phase is the „situation" proper – a military term for the meeting of two or more agonal forces. The situational is the counterpart of the strategic, bringing with it increasing entropy. The concrete contingent conditions – that range from the terrain through to the actions of opponents – threaten to undermine any plan, regardless of how carefully it was drafted. Uncertainty is a key characteristic of the middle phase. As soon as it is gone, the game enters into its final phase, in which predictable finalities or carried out and the winning player has the opportunity to gloat over her opponent.

In the course of the game playing situation it is close to impossible to maintain the optimal coordination of the agent-multiplicity that is given in the beginning phase. Every contact with the enemy threatens to mess up the sublime clockwork-precision and disrupt production chains, marching formations or attack patterns. In these moments the uncoordinated, anarchic semi-autonomy auf each unit is unleashed, leading to increasing instability that highlights the hubris of the strategy game player's would-be sovereignty. These moments in which the perfect order falls apart are accompanied by a feeling of powerlessness.

A desiring-machine-assemblage does not form a closed monolithic whole. It only appears as such, when it is viewed as a „molar" machine – a large scale, socio-technical-machine that is supposed to function flawlessly in our utilitarian culture (Deleuze/Guattari: 2004a). This machinic dimension is embedded in the narrative framing of *StarCraft*, which revolves around the different species striving for „purity of essence" and „form" (Underwood/ Roper/Metzen/Vaughn 1998: 53, 72). Seen on the „molecular" level, in contrast, desiring-machines constantly subvert the molar functionality. On this level their dysfunction is part of their functioning (Deleuze/ Guattari 2004a: 33–34). While desiring-machines are committed to utilitarian efficiency and a functional imperative on the molar level, they unfold idiosyncratic play on the molecular level. Every machinic embodiment can tend to one or the other side. This is dependent, among other things, on context – it makes a difference, for example, if *StarCraft* is played among friends over the course of a weekend on *Battlenet* or as part of a US Air Force course on crisis planning under stress conditions.

Since machinic embodiments always exist in two dimensions, they can always suddenly change their orientation. Thus, in the beginning phase, the *StarCraft* player's embodiment follows a molar optimisation imperative and simulates a phantasm of total control, but exhibits molecular break points in the middle phase. While the contingent incalculability of the semi-autonomous agent-multiplicity forms a source of great frustration for some players, others experience it as a source of great pleasure. The molecular dimension of the machinic embodiment also shows itself in the idiosyncratic playing styles of different players, which take the form of favoured units, tactics and strategies – preferences that cannot be derived from the molar imperative for efficiency.

The tension between the system's molar and molecular dimensions is a fundamental source of *StarCraft's* thrill. In the course of the game, the strategy player struggles to maintain control over her machinic embodiment. She oscillates between phases of higher integrity and those of growing disintegration. While it is true, that strategy games like *StarCraft* transport an efficiency imperative – with regards to resource harvest, the establishment of production lines ect. –, this is only half of the story. The optimisation of these processes, i.e. the reduction of the play in the productive system, serves the purpose of maximizing the possibilities of the destructive system. The more effective the build-up, the more freedom the player has to make tactical and strategic decisions in the rapid unfolding of the mid-game. Game play occurs on the threshold between the desire for optimal control, which is necessary for strategic victory, and the tantalizing risk of losing control as the complexity of the player's machinic embodiment grows exponentially. It is driven by an instable dynamic that oscillates between the poles of self-control and it's loss.

Technology of self-dominion

In closing the paper would like to shift the focus away from the in-game action to the player in front of the screen and shine a final light upon the machinic embodiment of computer game playing as a a „technology of dominion" and a „technology of the self" (Foucault: 1988), i.e. a practice that makes a subject into an object and one through which she

forms herself. This conceptual framework puts the relationship of the player to herself, as it is mediated by the program and gaming system, centre stage.

The internalisation of a game's interactive symbol system is the disciplinary dimension of computer game playing. In the exercise necessary to master the game's controls, the player objectifies herself by incorporating her chosen virtual embodiment. In this computer game playing is a technology of dominion. In order to emerge as a dominant power, the computer game player needs to first take up a submissive position. But, once a rudimentary degree of mastery has been achieved, players can begin to make use of the game mechanics and start to manifest idiosyncratic styles of play, shaping their embodiment to their liking. In this computer game playing is a technology of the self. The player will never achieve complete control over her machinic embodiment, though, as it is continually being subverted during the course of the game-playing situation – a source of endless fun for the multitude of *StarCraft* players, who are some of the most loyal in the industry.

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