

The Rhetoric of Game Space

Lotman's Spatial Semantics as a Method for Analysing Videogames

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The spatiality of videogames came prominently into focus in the last years (Günzel 2008a, 2008b and 2012; Wiemer 2008; Ljungström 2005 and 2008; Nitsche 2008; Gazzard 2013), while at the same time their potential for political expression was examined (Bogost 2007 and 2008; Klevjer 2002; Frasca 2001; Flanagan 2009; Schrape 2012). Up until now, however, rhetorical analysis centred mostly on visual interfaces and systemic behaviours. But space is a unique property of games and new media (Manovich 2001) that can't be put in one or the other category. Instead, it is both: a mimetic presentation, which guides the player's understanding and a systemic structure that constrains and channels play. As it is crucial for the experience of many games, it can be assumed that space can be an integral part of a game's rhetoric. But how can game space work as a rhetorical device? This article investigates the question theoretically and through an exemplary analysis of a game that clearly makes use of the rhetorical power of game space and does so in a very transparent way: Serious Games Interactive's *Global Conflicts: Palestine* (Serious Games Interactive 2007). As method for rhetorical analysis, the Spatial Semantics by Estonian semiotician Yuri M. Lotman are explored. First, however, it will be argued, what a spatial approach to the rhetoric of videogames is.

The Overlook of Game Space in Procedural Rhetorics

Rhetorical analysis of videogames was introduced by Gonzalo Frasca (2001) and expanded on by Ian Bogost: His book *Persuasive Games* from 2007 as well as his article on *The Rhetoric of Video Games* from 2008 are considered to be landmarks within Game Studies. Therefore, even if there now exist further examinations of the topic (Flanagan 2009), Bogost's approach will be the central point of reference in this article. First, however, in order to recognise what is unique about the rhetoric of videogames, it is necessary to remind oneself about the meaning of 'rhetoric.'

If we talk about the rhetoric of movies, pictures, games or even fashion, we often mean inscribed ideological positions. In this case 'rhetoric' denotes content, not form. The actual system of rhetoric, however, is a 2500-year old heuristic to organise speech and text, regardless of its content. Aristotle (1991) described it as technique of strategic communication with the intent to persuade through reason, emotion and the image of the speaker. He defined it as the counterpart to dialectics, as a method not to attain knowledge, but to create plausibility. In contrast to logical reasoning, its premises are therefore not analytic truths, but accepted beliefs. The rhetorical reasoning, the enthymeme, is not deductive by nature, but reductive: It makes the unknown understandable by leading it back to the familiar (Kopperschmidt 2005, 31f.). Originally it was restrained to speech, but since Augustine of Hippo it became transformed to a general text theory. In modernity, it degenerated to mere stylistics, before it vanished in the face of positivism (Barthes 1994). In the last century, however, it was rediscovered by theorists like Chaim Perelman (1990; Perelman/Olbrechts-Tyteca 1991) and Stephen Toulmin (2007) and became applied not only to verbal text, but also to pictures (Barthes 1978), design objects (Buchanan 1985) and film (Joost 2008; Kaemmerling 1971; Kanzog 2001).

In its broadest sense, rhetoric can be described as a *textual strategy* – in the sense of Umberto Eco – to guide the recipient's understanding in an intended way. But this implies that the object of rhetorical analysis would have to be considered as some kind of text. This, of course, leads back to the age-old question of Game Studies: Are videogames texts? And if they were not, wouldn't it be a colonial act to apply rhetorical analysis (Eskelinen 2001)? There exist a lot of definitions of videogames: as space images (Günzel 2008a and 2012), formal systems (Juul 2005a; Crawford 1984), cyberdramas (Murray 1997) or cybertexts (Aarseth 1997; Kücklich 2006). The very existence of so many definitions highlights two things: "videogames are a mess" (Bogost 2009) – and *every definition is bound to a contingent theoretical perspective*. They all can be understood as epistemological analogies in order to grasp a new subject (Poser 2006). They lead back the unknown (videogames) to the familiar (text, space, pictures). In this vein, it shall not be said that videogames are rhetorical texts, but just that they can be analysed as such.

Here, rhetoric is conceptualised as a general text theory bound to the perspective of persuasion through argumentation. As every textual strategy is reliant on an intended effect and there can't be a formal analysis without at least an implicit (and subjective) understanding of the meaning of a given text, rhetoric depends on hermeneutics in the broadest sense (Eco 1979). In order to analyse the rhetorical form, we have to understand the content first. This highlights a fundamental paradox: The hermeneutic circle presupposes the existence of a fixed material text (Dilthey 2003). But this is exactly what is not given in ergodic artworks like videogames (Aarseth 1997; 1999). If the visual surface of the videogame is always changing in response to the player's actions and is therefore not fit to be the prime

reference point of a rhetorical analysis – where else could persuasion be at home in games?

This question worked as entry point for a new concept of rhetoric, developed by Frasca and Bogost: Frasca (2001) defined games as *simulations* and declared them to be a whole new mode of representation – not through signs, but through rules. In *Unit Operations*, Bogost (2006, 98) clarifies this notion of simulation as “a representation of a source system via a less complex system that informs the user’s understanding of the source system in a subjective way.” With this invocation of subjectivity, he reclaimed the necessary ideological inscriptions in simulations as objects for rhetorical analysis. For Bogost and Frasca, simulations in general and videogames in particular perform a procedural rhetoric, not based on words but rules and processes. Taking up the notion by Salen and Zimmerman (2004), Bogost assumes a “possibility space of play” including “all of the gestures made possible by a set of rules” (Bogost 2008, 120). The structure of this possibility space can be understood as model that the player explores through his or her actions in play:

Video games are models of real and imagined systems. [...] [W]hen we play, we explore the possibility space of a set of rules – we learn to understand and evaluate a game’s meaning. Video games make arguments about how social or cultural systems work in the world – or how they could work, or don’t work. [...] [W]hen we play video games, we can interpret these arguments and consider their place in our lives (ibid., 136).

At the heart of the procedural rhetoric lies the *procedural enthymeme* – an adaption of the rhetorical reasoning or syllogism to videogames: “the player *literary* fills in the missing portion of the syllogism by interacting with the application, but that action is constrained by the rules” (Bogost 2007, 34). The game proposes a starting position and a goal and the player has to try out how to reach the goal, but every solution he or she finds is already part of the game’s possibility space.

The concept of the procedural enthymeme is extremely helpful for analysis, but it has a flaw: Bogost (2007, 18) defines an enthymeme as deductive reasoning with omitted proposition. In the sentence “We cannot trust this man, as he is a politician”, the major premise would be omitted (ibid.). It’s a compressed reasoning, actually consisting of three steps: (1) “Politicians are not trustworthy”, (2) “This man is a politician”, (3) “Therefore, we cannot trust this man” (ibid.). Bogost equates the starting position in a game, the player’s struggle to beat it and the goal with the major and minor premise and the conclusion of a syllogism (the result is a concept that resembles the so-called practical syllogism, discussed in Aristotle’s *Nicomachean Ethics* [Poser 2006, 53]).

However, his understanding of an enthymeme differs from the one Aristotle had. The original enthymeme simply describes a kind of reasoning that is based on probable and familiar premises, not analytic truths – in contrast to logic and dialectic (Ueding/Steinbrink 1994, 226). According to Roland Barthes (1994), the elliptic enthymeme, which Bogost refers to, developed much later in antiquity. At this point in time, rhetoric was already highly formalised as part of the educational system – and it is exactly this formalisation that makes the procedural enthymeme possible in the first place. As it is formally defined, it could be identified in nearly every game, regardless of its content. Doesn't even *Tetris* (Pajitnov 1984) contain a procedural enthymeme, persuading the player to staple blocks in a way defined by rules? As valuable as it is, it therefore doesn't answer the question, why the player should understand any procedural representation as referring to something real and making a plausible claim about it. The emphasis in the Aristotelian enthymeme, on the other hand, is not on how to trick the listener via an omitted premise, but on how to make an argument seem probable and plausible – and this is a task that can't be formalised as easily.

Therefore, while the procedural approach is generally convincing, a too strong focus on the systemic nature of games might result in the danger of overlooking other aspects, which are just as crucial. Very obviously, the level of visual representation is the one that motivates the player to draw references from in-game experiences to concepts of reality. As rules are formal, and often hidden from the player, they can't motivate a reference by themselves. The visualisation in the graphical interface, however, can perform this task: the game has to show what it is about. However, this is not such a trivial task, as it may seem. A closer look at one of the games, Bogost uses as examples, highlights a complex strategy of visualisation that motivates a very specific understanding by the player: *McDonald's Video Game* (Molleindustria 2006) asks the player through the structure of its rules to realise the fast-food industry as inherently destructive – it effectively performs a procedural enthymeme. What makes the game such a great satire, however, are not only its rules, but also its cartoonish visualisations that make the game appear cute, harmless and – in regard to the actions represented – extremely cynical. In other words: The game shows its irony through the very way it represents itself. The notion of 'irony' is fitting, as – according to Culler (2000, 73f.) – it is characterised by an obvious contradiction between two parts. Here, the cute visualisations stand in glaring contrast to the tasks the player has to perform and the goals he or she has to reach. Furthermore, the *McDonald's Video Game* contains quite a lot of textual background information and even a "Why this game?" section, where the documentary *Super Size Me* (Spurlock 2004) and books like Naomie Klein's *No Logo* (2002) are suggested for reading. These references can be understood as grounds or evidences that back up the game's implicit argumentation (Kopperschmidt 2005; Toulmin 2007). The game strives for plausibility. This observation highlights

an important feature of any argumentation that is not prominently reflected in Bogost's writing: An argumentation consists not only of a claim, but at least of another proposition that backs it up. It is a chain of propositions, supporting each other in the attempt to create validity. Bogost clearly demonstrates how a game can make a claim through the structure of its possibility space. But this perspective has to be supplemented by a careful consideration of the way the graphical interface motivates real-world-references and modes of understanding (irony) and by an analysis of the whole argumentation of a game understood as chain of propositions (Schrape 2012).

Most important, however, is another blind in procedural rhetorics: the overlook of the game space as a rhetorical function. As simulations, games contain models. A quick glance on architecture shows that a model can be spatial – not only in the metaphorical sense of the possibility space, but as actual space of movement. Following Bogost and Frasca, such spatial models necessarily have to be subjective and ideological. But how can a spatial model be analysed from a rhetorical perspective?

Compared to other forms of texts, spatiality is quite a unique property of videogames – and a baffling feature. This becomes evident in the fact that Juul (2005a, 188–189) describes it as an exceptional and special case within his theory of videogames: “*Space* is a special issue between rules and fiction. [...] [L]evel design, space, and the shape of game objects refer simultaneously to rules and fiction. This is a case in which rules and fiction *do* overlap.” For this very reason, game space is of extreme importance for any rhetorical analysis. Following Bogost and Juul, it could be assumed that within game space, procedural, visual and textual rhetoric merge into one.

Further, from a methodological point of view, game space seems to be a perfect object for analysis, as its basic structure quite often is fixed: the player can move through it, but not change fundamentally. This offers great opportunities for analysis as it qualifies the game space for the application of the hermeneutic circle; it can be repeatedly observed and analysed – but how?

Lotman's Spatial Semantics as Method to Analyse Game Space

One promising framework for the analysis of spatial rhetoric in videogames are the Spatial Semantics by Yuri M. Lotman. Surprisingly, the Estonian semiotician has not come up as a reference point in Game Studies yet. Lotman developed a unique take on narratology and rhetoric – one that doesn't solely focus on sequences in time as organising principle of narrative, but also on structures in space. As many games are fundamentally spatial, this recommends Lotman as starting point for their rhetorical investigation.

Yuri M. Lotman founded the so-called Tartu-Moscow Semiotics School, gathering renowned theoreticians of his time and developing collectively a theoretical framework for the semiotics of culture. Relatively independent from French and American semiotics, this school melted sign theory with cybernetics, information theory and formalism (Eimermacher 1986). The two works, which are most relevant in the context of spatial rhetoric, are *Universe of Mind*, where Lotman developed a semiotic theory of culture, and *The Structure of the Artistic Text*, where he explained his spatial take on literary analysis.

For Game Studies, Lotman is not only of interest because he developed a spatial narratology, but also because of his theory of play. Similar to Gadamer (1989), he developed his concept of art out of a discussion of play. According to Lotman (1977, 61) in play as well as in art, two modes of behaviour are at work: a practical and a fictional. Artists, readers and spectators would perform a similar “synthesis of practical and conventional” (ibid. 65) – fictional – behaviour. They all would know that games and artworks are not real, but nevertheless treat them as such to a certain degree. Play, on the other hand, would be characterised by the attributes of fictionality, safety, controllability, the existence of mental models, the possibility to try out (to simulate) and its tendency to conditionate. A comparison with concepts of ‘play’ by Caillois (2001) and Huizinga (1955) cannot be done in this article, but the parallels are obvious.

Of greatest interest is Lotman’s emphasis on models: For him, an artwork would not simply depict or describe an aspect of reality, but model it. He understood modelling as a process of translation, where something is reformulated according to an artwork’s or an artform’s inherent (semiotic) rules – its specific system of denotates (Lotman 1977, 46). For him, the singular artwork is a model, built within conventions of art form, style and genre – the model building system. The *primary model building system* of our culture would be common language; every art form would be a *secondary model building system*, based on already coded material. Lotman’s considerations apply perfectly to games, if they are understood as simulations. Their models are built out of algorithmic as well as semiotic rules, depending on technical restrictions and the conventions of game and interface design – the secondary model building system of the videogames. Moreover, what a game models is already pre-coded, already understood as something and conceptualised within language. From this perspective it therefore proves to be imprecise to say that a simulation is “a representation of a source system via a less complex system” – it more correctly should be described as a secondary computational model (run through time), built within given technical conditions and conventions, which represents pre-existing, culturally coded models of some entity. The important point here is not Lotman’s conviction that verbal language should be the primary model building system, but that any representation must be a secondary model, derived from an already existing mental model that is depending

on culture. To put it another way: Models (and simulations) do not simply represent reality, but models of this very reality that never can be grasped in objective totality – models model models.

Considering that play is Lotman's starting point in developing a theory of narrativity and culture, it isn't surprising that it fits well to the analysis of games. Not only in his take on narratology, but also in his cultural theory where Lotman focuses on spatiality. Essential for his thinking is the notion of boundaries, which would shape cultures and worldviews: Lotman (1990, 123) envisioned any culture to be imbedded in a uniquely structured semiotic universe, consisting of various languages (or codes) interacting and relating to each other – the *semiosphere*. The semiosphere of any culture would have a boundary, which would mark a distinction to another culture, but would also be a place for translation between them. In itself the semiosphere would be divided by countless sub-boundaries, marking differing sub-cultures within. These boundaries would always be moving and could take on various forms, but their basic function would stay persistent and be universal:

Every culture begins by dividing the world into 'its own' internal space and 'their' external space. How this binary division is interpreted depends on the typology of the culture. But the actual division is one of the human cultural universals. The boundary may separate the living from the dead, settled people from nomadic ones, the town from the plains; it may be a state frontier, or a social, national, confessional, or any other kind of frontier (Lotman 1990, 131).

Obviously, Lotman's notion of boundaries is not limited to geographical space. But if inscribed into real space, they would foreground the ideological, religious or cosmological structure of a culture's semiosphere:

When a semiosphere involves real territorial features [...], the boundary is spatial in the literal sense. The isomorphism between different kinds of human settlement [...] and ideas about the structure of the cosmos has often been remarked on. Hence the appeal of the centre for the most important cultic and administrative buildings. Less valued social groups are settled on the periphery. Those who are below any social value are settled on the frontier of the outskirts [...], by the city gate, in the suburbs. [...] However, some elements are always set outside. If the inner world reproduces the cosmos, then what is on the other side represents chaos, the anti-world, unstructured chthonic space, inhabited by monsters, infernal powers or people associated with them (ibid., 140).

What is striking about Lotman's descriptions of boundaries is that immediately pictures of the fictional worlds of videogames come to mind, especially role-play-

ing-games with complex settings like *Dragon Age: Origins* (BioWare 2009) or *World of Warcraft* (Blizzard Entertainment 2004). These worlds are full of boundaries in the aforementioned sense: Boundaries between safe cities and the dangerous wilderness, between the overworld and the dungeon, between the territory of the Alliance and the Horde etc. Ljungström (2005) accomplished a detailed analysis of the spatial structures in *World of Warcraft*. In recourse to the seminal architectural work *A Pattern Language* by Christopher Alexander (1977), he described, among other things, how the fictional world of Azeroth is divided into opposing fields and how the major cities Orgrimmar and Ironforge are structured into several zones with clear identity, separated from each other by boundaries with just a few entry points. But boundaries can also exist in time, according to Lotman (1990, 140): “‘Normal’ space has not only geographical but also temporal boundaries. Nocturnal time lies beyond the boundary”. A game like *Minecraft* (Mojang 2009) is evidently structured around the fundamental boundary between day- and night-time.

Not only whole semiospheres, but also fictional universes that model them can be described as compositions of boundaries. For Lotman, the relations between these boundaries form the potential for *events* – which, in their specific sequence, build the *sujet* or plot of a narrative. An event, on the other hand, would be constituted by the crossing of a boundary within the fictional universe (Lotman 1977, 233). Typically, such a fictional universe would be divided into opposing *semantic fields*. An example: the semantic fields of a basic vampire story are the world of the living and the world of the dead. The crossing of the boundary between these fields constitutes an event. Interestingly, this crossing can be performed in two directions within the same fictional universe: the living can venture into the world of the dead and the dead into the world of the living. As it becomes obvious, the spatial relations within the very same semantic fields hold the potential for different series of events – which in turn combine to diverse *sujets*.

According to Lotman, two types of characters can be distinguished in narratives: (1) mobile ones, who can move through the fictional universe and across its boundaries and (2) immobile ones, who he describes as “functions of that space” (Lotman 1990, 157). The hero of a story, of course, is always a mobile character:

A hero [...] can act that is, can cross the boundaries of prohibition in a way that others cannot. Like Orpheus or Soslan from the epic of the Narts, he can cross the boundary separating the living from the dead, or like the Benandanti he can wage nocturnal war with witches, or like one berserk he can fling himself into battle, defying all rules. [...] He may be a noble robber or a picaro, a sorcerer, spy, detective, terrorist or superman – the point is that he is able to do what others cannot, namely to cross the structural boundaries of cultural space. Each such infringement is a deed, and the chain of deeds forms what we call plot (ibid., 151).

This description is not only perfectly fitting for most narratives, but also for many videogames. Here, the player takes on the role of the hero, the mobile character, while the non-player-characters (NPCs) are immobile in most cases. If a NPC stands in front of a shop, just waiting for the player to come along and to trigger a dialogue, if a wolf is striving back and forth in the forest, following a prescribed movement-pattern, until the player reaches a defined attack-range, then such NPCs can be considered as functions of the game space in quite literal sense.

In games, to cross a boundary can mean to enter a dungeon or a city, to travel from one map to the next – or even to steal a car in front of the police (triggering a specific element of gameplay, namely a car chase). Boundaries come along with obstacles, which can't be overcome by anyone except the hero (the wolf has to be killed, the door to be lock-picked, the dragon to be defeated). This concept reminds of Aarseth's (1997, 90ff. and 1999) master tropes of the cybertext: the *aporia* and the *epiphany*, the hopelessness in face of an obstacle, and the revelation through its overcoming.

What Lotman's spatial approach to narratives allows, is to separate the fictional world of a story from its actual plot – and to analyse its spatial structure as a generator for a variety of different plots. This spatial view on narratives fits far better to games, than a temporal one: Juul's (2005b) objections against the latter one do simply not relate to Lotman. He probably would assert that videogames often contain highly structured fictional universes and put the player in the position of a mobile character (the hero), but that it is the player him- or herself, who performs the deeds and triggers events while crossing the boundaries, constituting a new and different plot in every playthrough. How well this approach fits becomes evident, when Lotman (1977, 241) even considers the possible failing of the hero, in his words: "drops out of the game."

Nevertheless, it is important to consider the specifics of videogames' fictional universes: even in their simplest form, they tend to possess boundaries – but often in a different way than in other media. In *Space Invaders* (Taito 1978), for example, the whole dynamic is driven by the player's struggle to keep the hostile alien forces from crossing a boundary – namely the bottom line of the screen. According to Lotman, its transgression would mark the only real event in play, signalled by the game-over screen. In many such early arcade games, the hero is a hopeless defender – and the narrative therefore cannot move forward, but is trapped within a potentially infinite delay of its own end. In other games, the structures of levels, sublevels and areas can be conceived as semantic fields, separated through boundaries associated with obstacles, which the player tries to overcome. In *Super Mario Bros.* (Nintendo 1985), 32 levels, grouped in eight supra-levels (worlds) with four sub-levels (stages) each, structure the fictional universe of the Mushroom Kingdom. Every level can be understood as arrangement of obstacles, which the player has to overcome in order to cross the boundary to the next one. Two

observations become obvious: First that the fictional world of *Super Mario Bros.* is actually highly repetitive – it isn't structured in just two distinct semantic fields (as in the Dracula example), but every field is divided into various sub-fields that mostly differ in details and degrees. These sub-fields with their own boundaries and obstacles protract the transgression of the fundamental boundary – in this case: the entry into Bowser's Castle in the last stage of the final world. The spatial structure of the Mushroom Kingdom is not built for the performance of a dynamic and dramatic narrative, but for the very delay of it. The same is true for *Castlevania* (Konami 1986), demonstrating that the fictional worlds of vampire stories too bend to the *secondary model building system* of the videogame. It nevertheless is important to point out that even in these early games, the dichotomy between semantic fields persists, even if it is discretised in a number of gradual varying sub-fields in order to prolong play. This leads to the second observation: Play doesn't happen in the moment of transgression of the boundary, but before – and potentially indefinitely so.

Even if there are important differences in the way videogames and traditional narratives are spatially structured, Lotman's spatial semantics can be a valuable method of analysis. Martinez and Scheffel (1999, 140f) summarised and operationalised Lotman's approach. They distinguish three dimensions of semantic fields: (1) the topology, (2) the semantics and (3) the topography. The topological level encompasses fundamental spatial relations ('up' vs. 'down'). The semantical level covers evaluations and connotations ('good' vs. 'evil'). The topographical level contains explicit denotations ('heaven' vs. 'hell'). In a semantic field, all three dimensions converge into one – but they can be separated for analytic purposes, in order to highlight the ideological structure of some fictional universe. A glance at espionage thrillers of the cold war era hints, how topological structures ('West' vs. 'East'), evaluative semantics ('Good' vs. 'Evil' – or vice versa) and topographical denotations (USA vs. USSR) can contain ideologies. In the analysis of game spaces, however, it is not so easy to distinguish all three levels, as the ones of topography and semantics tend to merge together in just one visual, whose evaluating and denoting dimensions often can't be completely separated.

In the following, Lotman's spatial semantics will be put to use in the exemplary analysis of just one game in order to highlight its analytic potentials: *Global Conflicts: Palestine* (Serious Games Interactive 2007). The game is a perfect example and proving ground for the method, as it possesses a quite simple and very clearly structured game space and refers to a real geopolitical region. The general applicability of the method will be discussed afterwards in the conclusion.

Exemplary Analysis: ‘Global Conflicts: Palestine’

Serious Games Interactive’s *Global Conflicts: Palestine* is a game with clear pedagogical intend (one of the game’s developers, Simon Egenfeldt-Nielsen [2007], is a leading researcher regarding the educational and pedagogical potential of computer games [Egenfeldt-Nielsen et al. 2008]) The developers openly state their intentions in the manual: to give the player insight in the complexity of the Israeli-Palestinian conflict, tell the stories of its participants and most importantly not to take sides. In short: The game’s intention is to abolish the prejudices of the player.

He or she takes on the role of a journalist, investigating the conflict. The game is structured in six episodes, dealing with topics like the clash between Jewish settlers and Palestinians in rural areas, the influence of checkpoints and security measures on the daily life of residents, the motivation of suicide bombers etc. Each episode consists of two phases of play (fig. 1). In the first phase, after selecting a newspaper to write for, the task is to interview characters, strategically select dialogue options and choose quotes. In the second phase, articles must be built out of these quotes. Strategic reasoning is necessary, as the player’s articles reflect political opinions and influence two scores: an Israeli and a Palestinian one. These scores have impact on the behaviour of characters, therefore taking sides changes what happens next. What follows is a non-playable phase in which the article gets evaluated, before an eyewitness report is quoted that relates to the episode’s topic. The main part of the game, however, is the first phase, which can be differentiated in two modes. In the first one, the player has to move the avatar through the game space to meet up interviewees. In the second mode, choices have to be made in dialogue menus, presented in cinematic style.

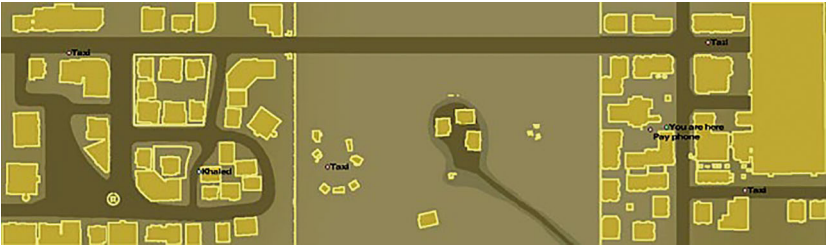
Fig. 1: The structure of an episode

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|--------------------|-------------------|---------------------|---|
| Playable Phase | Phase I: Research | 1. Mode: Navigation | <ul style="list-style-type: none"> • Decision about newspaper • Navigation through game space • Dialogue, gathering quotes |
| | | 2. Mode: Dialogue | <ul style="list-style-type: none"> • Side quests |
| Non-Playable Phase | Phase II: Writing | | <ul style="list-style-type: none"> • Strategic selection of quotes |
| | Evaluation | | <ul style="list-style-type: none"> • Feedback about success and consequences |
| | Eyewitness report | | <ul style="list-style-type: none"> • Thematically relating to the episode |

Many critical decisions take place in the second game mode, which, together with the non-playable phase, will be neglected in this article. Instead, it will focus on the importance of space in the first mode.

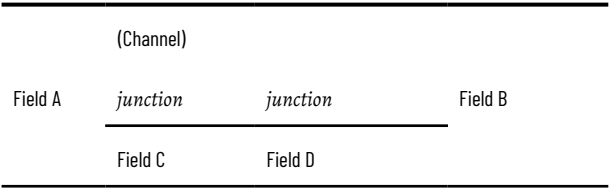
In *Global Conflicts: Palestine*, the game space contributes to a fictional universe that can be analysed with Lotman’s spatial semantics. The significance of this approach is immediately evident if one takes a look at the game’s map (fig. 2). It allows the player to orient him- or herself by a secondary view from the bird’s eye perspective (Günzel 2008b). Like in many strategy and role-playing games, in this view, the game space is abstracted to an information field, empty, deterritorialised and reduced to its formal function (Wiemer 2008). It’s the perfect starting point for the examination of fundamental topological structures.

Fig. 2: The map



The game space is separated in three fields: two opposing ones and an interspace. By cartographic conventions, the left and the right ones can be recognised as cities, linked by a street. The middle field can be split up further, as there are two gatherings of buildings on the left and in the middle. The isolated buildings at the bottom and the right shall be ignored to simplify matters. Obviously, the game space is structured by a left vs. right opposition, which is mirrored in the middle-field. The condensed topology and the maze-like patterns in the cities are thereby typical for game spaces. The topological structure of the game space can be visualised as thus (fig. 3):

Fig. 3: Topological structure of the game space



The *primary* view of the game space is its three-dimensional presentation – it is the place, where the actual movement takes place (Günzel 2008b). Through this view, the game's topography can be examined. The city in field A reveals itself to be dominated by concrete buildings, speckled by small shops with signs in Arabic and cheap looking display windows (fig. 4a). There are dozens of waste containers (fig. 4b), some market stands and a few basic playgrounds. Many pedestrians look stereotypical Arab: women wear headscarfs, men white robes. Ambulances bear the sign of the Red Crescent, the Arabic pendant to the Red Cross. All these elements are more than simple detonates, as they also evoke connotations of poverty connected to Arabs.

Fig. 4a-b: Topographical details in field A



Dozens of graffiti charge the topography with political references. One picture, for example, shows a child, being under fire by guns (fig. 5). The ambiguity of the picture is reduced by an *anchorage* through strongly encoded signs (Barthes 1978): the Palestinian flag, carried by the child, and the Star of David, painted on the guns. As a visual metonymy, the graffiti indirectly denotes Palestinians and the Israeli army, while connoting helplessness and aggression. As a whole it evokes an antithesis between the ethnic groups.

Fig. 5: A graffiti on the wall



The majority of the graffiti, however, consist of writing, some in Arabic, but most in Latin scripture. They refer to the Israeli-Palestinian conflict and inscribe the Palestinian's rage within the topography. The antithesis *us vs. them* reoccurs in variations. The relationship between the own group and the other is summed up in the phrase: "Israeli killing us?!?" The Israelis are presented as aggressors and killers, capable even to child murder ("Where is our children"), while the Palestinians are associated with positive attributes, like the will to freedom ("give me liberty [...]"), willingness to make sacrifices ("or give me death"), conviction and resistance. Regarding their rhetorical function, the graffiti disambiguate the meaning of field A, which now can be identified as a Palestinian city or town. As details, they also evoke an *effect of reality* (Barthes 1989). Most importantly, however, they model the Palestinian perspective on the conflict.

Field B stands in total opposition to field A. It is also a city, but the buildings are ancient and ornated. There are no garbage containers, but clean playgrounds and shops with well-tended showcases (fig. 6a). Lots of trees line the streets, a huge market place dominates the city scape. Magnificent buildings stand on proper squares and at some of the corners soldiers are watching out. In the middle, a huge church can be found (see fig. 6b) and at the right brim a gigantic wall, in front of which men in Jewish orthodox dress are praying. Many of the pedestrians wear the kippah. There are no graffiti in this field.

Fig. 6a-b: Details in field B



The details in the topography of both fields motivate a specific understanding: as Palestinian town and as Jerusalem. The game thereby alludes to visual stereotypes to guide the player's understanding. (In the sense of Putnam [1975] stereotypes do not necessarily imply prejudices. As mental concepts with reduced complexity, they enable understanding in the first place.) Field B is disambiguated by famous historical sights, like the Western Wall or the Church of the Holy Sepulchre. Most players will understand it to be Jerusalem. This is remarkable, as its structure does not resemble the real one in any way. While Jerusalem is a big city, field B only consists of 22 buildings – thus equating it in size with the Palestinian town. It is a model, built within the convention of a highly condensed game space. The model works like a synecdoche, as it evokes the idea of a whole (Jerusalem) by the showing of familiar parts (the Western Wall). It's the fundamental rhetorical pattern: control of understanding by recourse to the familiar.

The details also motivate evaluations: The trash, the sparse display windows and the simple concrete buildings connote poverty, while the lush display windows, the ornamental buildings, the trees and the huge market connote wealth. Further, the graffiti connote anger and despair, while the soldiers and military vehicles trigger associations of power.

Verbal texts during the game affirm that field B is Jerusalem while field A is named Abu Diz – actually a small town within the Palestinian territory, which borders Jerusalem. Moreover, field C is discovered to be a Palestinian village and field D to be an Israeli settlement. Both are mirroring detailings of A and B: While the village is presented as poor with simple buildings and lots of trash containers (fig. 7a), field D reveals to be a clean and tidy settlement behind barbed wire (fig. 7b).

Fig. 7a-b: Details in field C and field D



The semantic fields, therefore, are structured as a doubled opposition between Israelis and Palestinians. The antithesis A-B is repeated in C-D. This pattern can be described as spatial parallelism. As a whole, the game space constitutes a model of the conflict's region, in which Israelis and Palestinians are strictly opposed (fig. 8).

Fig. 8: The spatial parallelism

| Field A | (Channel) | | Field B |
|------------------|------------------|-----------------|-----------------|
| | Field C | Field D | |
| Poverty Anger | Poverty Anger | Wealth Power | Wealth Power |
| Palestinian | Palestinian | Israeli | Israeli |

A single street, however, links field A and B, leading to checkpoints. Here, the movement of the player is channelled through junctions. With Ljungström (2005) and in recourse to Alexander (1977, 549 and 277) these junctions can be understood as gateways, enforcing an ‘entrance transition’ and thus enabling the player to recognize that he or she moves to a different area. The checkpoints have to be passed several times during play. This enforced repetition can be described as *spatial amplification*, as it accentuates the checkpoints relevance. Topographically, soldiers and watchtowers characterise the junctions, denoting the military while connoting power. Before the checkpoint of Jerusalem, there is a long queue of Arabs. This implies, that Palestinians want or need to get into Jerusalem and cannot pass freely (fig. 9a-b).

Fig. 9a-b: The checkpoints



The checkpoints mark an obstacle, whose overcoming should constitute an event. It's impossible for the waiting Palestinians to cross the boundary, so their impermeability is hinted. Strangely though, the boundary is no real obstacle for the player. When arriving, sometimes a dialogue situation is triggered: A soldier asks for the player's papers, whereupon he or she can comply or ask for the reason. In the latter case, the soldier gives an explanation, but in the end the player has no alternative as to hand over the press card – whereupon he or she is allowed to pass.

What is the function of this reoccurring intermezzo? Why should an obstacle be established only to be solved automatically? Why an aporia is hinted, but abolished so quickly that an epiphany can't arise? Whatever the deficit in game design might be, the rhetorical function is evident: The short scene works as an *example*, the inductive counterpart to the enthymeme (Bogost 2007, 18). It illustrates the situation of the people in this region. It refers to a general template, but actualises it in an atypical way. To be able to cross the boundary as journalist is marked as exception. Therefore, the repeated scene motivates a reasoning: "If I can pass the checkpoint because I'm a journalist, people who aren't can't." The impermeability of the boundary paradoxically gains evidence because it doesn't count for the player. While the player's journalist can move between the semantic fields, the other characters are bound to just one. This fact is the motivation for many quests during the game.

What is the rhetorical function of the game space? First, it's a potential for events, to be actualised during play. Second it constitutes a model of a real geopolitical situation and therefore motivates the player to relate his or her experiences to reality. It is, however, a highly selective condensation of geopolitics from a very specific perspective. In a way it 'describes' the geopolitics to create the basis for further argumentation. Every argumentation presupposes such a description of its topic and, as any description is bound to a contingent perspective, this already implies presuppositions (Kopperschmidt 2005, 66). Knappe (2000, 121) calls this a thematic instruction and describes it as fundamental part of any rhetorical text. In classical theory it equals the *narratio*, the telling of the cause, as foundation

for the *argumentatio*, the strategic persuasion. The spatial model fulfils this very function, as it 'describes' the Israeli-Palestinian conflict as antithesis between homogeneous groups.

Moreover, this dichotomy is mirrored in the scores that are presented on the screen and in front of the game space – they belong to what Galloway (2012, 39ff.) calls the *intraface*, an interface within the interface. An Israeli and a Palestinian score measure the relationship of the player to these groups. If he or she helps them through various tasks or if he or she writes benevolent articles, the scores raise – influencing the reactions of the dialogue-partners during the rest of the game. If, for example, the player attains a high Israeli-score, characters, who are affiliated with Israel will react friendlier, opening up more dialogue options and vice versa. The scores model the conflict as antithetical opposition between two homogenous groups – and the player has to orient his or her actions towards this score in order to play successfully. The game thereby constructs a dilemma: there seems to be no other choice than to choose allegiance. Both, the model of the conflict in the game space and in the scores are antithetical – this mirrored and doubled structure can be described as a *transdiegetic parallelism* (Schrape 2012, 205 and 331).

Up until now, the representation of the Israeli-Palestinian conflict in *Global Conflicts: Palestine* seems to be simplified in an extreme way. With Lotman, one could say that the modelling of the geopolitics and cultural conflicts happened in accordance with the conventions and necessities of the secondary model building system of the videogame: The opposition of just two factions forces the player to make hard decisions, while the coupling of the factions to clearly defined places in game space allows for effective orientation. If the game would try to model the real complexity of the conflict, with dozens if not hundreds of factions and sub-factions, and a realistic geopolitical model, in which the Palestinian areas are so much intersected with Israeli settlements that they resemble a Swiss cheese, the player could be confused. Nevertheless, up to this point, the troubling fact remains that despite the good intentions of the designers, the modelling of the conflict in game space and game mechanics results in a distorted representation, reduced to a binary opposition between two homogenous groups.

The story, however, doesn't end here. The binary opposition is just the basis for further argumentation. During the game, the player gets to know a diverse set of figures: a young Israeli soldier who wants to be an artist, a veteran who longs for peace, his wife who is a human rights activist, an ambitious soldier who justifies all means for security, a hateful Palestinian who despises the Israelis, a grumpy old Arab who disapproves of violence, a young Arab boy who loses himself in fantasies about martyrdom, etc. The ensemble of characters covers the whole spectrum of political positions. The player has to discover that there are fanatics on both sides. He or she will learn about the demoralising effect of constant threat on Israeli families, but also about the frustration, poverty and misery of

the Palestinians in the occupied territories. Hamas activists will explain their motives to him or her as well as the Jewish settlers. Most importantly, he or she will learn about the longing for peace on both sides. In the end, the player won't be able to stop a Palestinian boy from throwing away his life and thereby experience the destructive power of fanaticism first hand. The simple antithesis between Israelis and Palestinians does not hold water throughout the game, as the player is cued to deconstruct it. The rhetorical strategy of *Global Conflicts: Palestine* therefore encompasses two steps: First, the game affirms the player's likely prejudices and reduces the complexity of its topic to a simple antithesis. Then, it guides the player to question this very antithesis. The spatial rhetoric of the game therefore builds the necessary foundation for its more differentiated narrative rhetoric. In the terms of Chaim Perelman (1990, 127ff.) the latter one performs an *argument of dissociation*, the splitting of concepts, believed to be self-evident.

Finally, the game concludes its argumentation through back-ups of its authenticity: After every episode, a thematically related eyewitness-report scrolls through the screen. The fourth episode, for example, is concerned with the motivations of the Palestinian suicide bombers. At one point, the player meets a boy who religiously justifies the acts. After finishing the episode, the player is confronted with an eyewitness-report making exactly the same claims – even up to the very phrasing. The authenticity of this report, again, is backed up by a reference (which can be looked up in the web). *Global Conflicts: Palestine* presents itself as well-researched, realistic and authentic. It thereby asks the players to relate their in-game experiences to their understanding of reality – and thus aims to motivate a transfer between the world of the game and the world outside of it.

Conclusion

Global Conflicts: Palestine is not the singular example for a rhetorical function of game space. Many games with elaborated game-worlds come to mind. One good example would be *Dragon Age: Origins*, which, with the mythical country of Ferelden, presents a highly structured fictional universe, where it is the main task of the player to cross boundaries between different semantic fields. On a fundamental level, the universe is divided between an upper part, populated by humans, elves and others, and an underworld, where demons live (the darkspawn), while the caves of the dwarves function as a kind of interface between those fields. The plot-development is driven by the transgression of the boundary by the demons, which invade the upper world. The task of the player is, of course, to stop the demons. In order to do so, he or she also has to venture into the underworld, thus transgressing the boundary in opposite direction. On a macro-level, the movement between those fields drives the plot of *Dragon Age: Origins*. What

makes the game interesting however, are the various sub-fields within the world. Ferelden is full of boundaries, the player has to cross – and many mark highly political oppositions. The realm of the dwarves (the city of Orzammar), for example, is divided into an upper and a lower part (dust town). In the first one, live the respected members of society, in the last one the castles. Below dust town are the ‘deep roads’ – abandoned, dangerous tunnels and caverns, where the demons live. The player, of course, has the ability to transgress the boundaries – if he or she is able to overcome the various obstacles (an attack by rouges, when first entering dust town). To cross those boundaries does not only move the plot forward, but is also understood by various NPCs as a political act (no respected dwarf enters dust town).

Another example would be the city of Denerim, in which the opposition between Israeli and Palestinian territories, described above, is nearly mirrored. Here, however, it is one between Humans and Elves. The latter ones live in a ghetto within the city as marginalised group, while the rest belongs to humans. Like the game space in *Global Conflicts: Palestine*, Denerim is structured by an antithetical topology, merged with a highly evaluative topographical representation, in which the poor, helpless and disadvantaged are contrasted with the rich and powerful. A detailed analysis of *Dragon Age’s* spatial rhetoric can’t be accomplished in this article, but it surely would unravel a complex fictional universe, structured by oppositions between countless sub-factions, resulting in a complex arrangement of boundaries and therefore a great potential for events and plot-development.

But spatial semantics can also be put to use in games, which at first glance do not have a complex game-world to explore. Gonzalo Frasca’s famous satirical experiment *September 12th* (Newsgaming 2003) is a good example. Here, the player can shoot missiles from a god’s eye perspective at terrorists in an Afghan city (see fig. 10). The obstacle being that it’s nearly impossible not to hit civilians by accident, which causes witnesses to transform into terrorists. In his discussion of the game Bogost (2007, 86f.) points out that it conveys a simple but powerful message by its rule-structure: the war on terror is the cause of terror – and the player learns this the hard way through a rhetoric of failure.

Spatial semantics, however, allows for further analysis: In *September 12th*, the movement of all characters are regulated by a grid-like spatial structure, which ensures their evenly allocation. This is of the utmost importance for the game’s rhetoric, as agglomerations of civilians or terrorists could enable the player to hit just one of the groups. The player’s actions, on the other hand, are not affected by this horizontal topology, as missiles can be shot on any location. Therefore, there also exists a vertical topology, separating two semantic fields: the invisible player’s field of omnipotence and the visible characters’ field of regulated movement. The launch of a missile can be understood as a crossing of the boundary between those fields and therefore as an event. A missile’s hit causes a building to crumble,

but only on a topographical level, as the ruin still channels the characters' movements – the game space's topology stays fixed.

Fig. 10: *September 12th*



The topographical presentation contributes to the game's rhetoric, as it motivates references to reality. Like in *Global Conflicts: Palestine*, visual stereotypes enable the understanding of the semantic field as Afghan city: women wear blue burqas, terrorists white headscarfs, while simple rectangular buildings, palm trees, market-stands and a sandy colour scheme evoke familiar images of Afghanistan. As the characters within the city can only react to the player's actions by dying or turning into terrorists (that are no threat to the player), this semantic field is connoted with passiveness and weakness. The invisible player's field, on the other hand, is associated with power. Its nature remains strangely unclear, as the only signs motivating any reference are the militaristic cross-hairs on the screen. The game's title, however, suggests that it represents the West or the US military in reaction to 9/11.

All in all, the game space constitutes an antithetical model of the geopolitics of the so-called war against terror, in which Afghans are mere objects to play with for a nearly omnipotent West. In this reading, *September 12th* is not only a critique of the assumptions behind the war on terror, but also a model of power relations that actually reaffirms Western feelings of supremacy. During play, this impression is challenged to some degree, as military force turns out to be contra-productive – but the asymmetry of the model is untouched by this experience.

As it becomes clear, the use of space is just one part of a game's rhetoric – alas a crucial one. This is not surprising, as games are complex hybrids between different medial forms and their rhetoric therefore grounds on all of them at the same time. The rhetoric of game space shouldn't be analysed independently from the rules, the narrative, the visualisations or non-interactive elements (like cut-

scenes). There is no necessary contradiction between a procedural, a narratological, a spatial or a visual take on a game's rhetoric. All these perspectives have to be considered, as they are relating to different aspects of the videogames. In their multifaceted wholeness, videogames prove to be wonderfully rich objects of analysis and rhetorical potential.

References

- Aarseth, Espen J. (1997): *Cybertext: Perspectives on Ergodic Literature*, Baltimore, MD: Johns Hopkins UP.
- (1999): Aporia and Epiphany in *Doom* and *The Speaking Clock*: The Temporality of Ergodic Art, in: *Cyberspace Textuality. Computer Technology and Literary Theory*, ed. by Marie-Laure Ryan, Bloomington, ID: Indiana UP, 31-41.
- Alexander, Christopher (1977): *A Pattern Language: Towns, Buildings, Construction*, New York, NY: Oxford UP.
- Aristotle (1991): *The Art of Rhetoric*, London/New York, NY: Penguin Books.
- (2004): *Nicomachean Ethics*, London/New York, NY: Penguin Books.
- Barthes, Roland (1978): Rhetoric of the Image, in: id.: *Image Music Text*, New York, NY: Hill&Wang, 32-51 [1964].
- (1989): The Reality Effect, in: id.: *The Rustle of Language*, Berkley, CA: University of California Press, 141-148 [1968].
- (1994): The Old Rhetoric. An aide-mémoire, in: id.: *The Semiotic Challenge*, Berkley, CA: University of California Press, 11-94 [1970].
- BioWare (2009) *Dragon Age: Origins*, PC: Electronic Arts.
- Blizzard Entertainment (2004): *World of Warcraft*, PC: Vivendi.
- Bogost, Ian (2006): *Unit Operations*, Cambridge, MA/London: MIT Press.
- (2007): *Persuasive Games: The Expressive Power of Videogames*, Cambridge, MA/London: MIT Press.
- (2008): The Rhetoric of Video Games, in: *The Ecology of Games: Connecting Youth, Games, and Learning*, ed. by Katie Salen, Cambridge, MA: MIT Press, 117-140.
- (2009): Videogames Are a Mess: Keynote presented at Digital Games Research Association Conference at Uxbridge, UK, September 1, 2009, bogost.com/writing/videogames_are_a_mess.shtml.
- Buchanan, Richard (1985): Declaration by Design. Rhetoric, Argument, and Demonstration in Design Practice, in: *Design Issues* 2/1, 4-22.
- Caillois, Roger (2001): *Man, Play, and Games*, Urbana, IL: University of Illinois Press [1961].
- Crawford, Chris (1984): *The Art of Computer Game Design: Reflections of a Master Game Designer*, Berkeley, CA: Osborne/McGraw-Hill.

- Culler, Jonathan (2000): *Literary Theory: A very short Introduction*, New York, NY: Oxford UP.
- Dilthey, Wilhelm (2003): The Development of Hermeneutics, in: *Philosophies of Social Science: The Classic and Contemporary Readings*, ed. by Gerard Delanty and Piet Strydom, Maidenhead/Philadelphia, PA: Open University, 99-101 [1900].
- Eco, Umberto (1979): ‚Lector in fabula:‘ Pragmatic Strategy in a Metanarrative Text, in: id.: *The Role of the Reader: Explorations in the Semiotics of Texts*, Bloomington, IN: Indiana UP, 200-260 [1979].
- Egenfeldt-Nielsen, Simon (2007): *Educational Potential of Computer Games*, London: Continuum.
- Egenfeldt-Nielsen, Simon/Jonas Heide Smith/Susana Pajares Tosca (2008): *Understanding Video Games: The Essential Introduction*, New York, NY: Routledge.
- Eimermacher, Karl (1986) [Ed.]: *Semiotica Sovietica 1. Sowjetische Arbeiten der Moskauer und Tartuer Schule zu sekundären modellbildenden Zeichensystemen (1962-1973)*, Aachen: Rader Verlag.
- Eskelinen, Markku (2001): The Gaming Situation, in: *Game Studies* 1/1, game-studies.org/0101/eskelinen.
- Flanagan, Mary (2009): *Critical Play: Radical Game Design*, Cambridge, MA/London: MIT Press.
- Frasca, Gonzalo (2001): *Video Games of the Oppressed: Videogames as a Means for Critical Thinking and Debate*, Master-Thesis, Georgia Institute of Technology, School of Literature, Communication and Culture, ludology.org/articles/the-sis/FrascaThesisVideogames.pdf.
- Gadamer, Hans-Georg (c1989): *Truth and Method*, New York, NY: Continuum [1960].
- Galloway, Alexander R. (2012): *The Interface Effect*, Cambridge, MA: Polity Press.
- Gazzard, Alison (2013): *Mazes in Videogames. Meaning, Metaphor and Design*, Jefferson, NC: McFarland & Co.
- Günzel, Stephan (2008a): The Space-Image. Interactivity and Spatiality of Computer Games, in: *Conference Proceedings of the Philosophy of Computer Games 2008*, ed. by id., Michael Liebe and Dieter Mersch, Potsdam: Potsdam UP, 170-188.
- (2008b): Raum, Karte und Weg im Computerspiel, in: *Game over! Perspektiven des Computerspiels*, ed. by Jan Distelmeyer, Christine Hanke and Dieter Mersch, Bielefeld: transcript, 113-132.
- (2012): *Egoshoooter: Das Raumbild des Computerspiels*, Frankfurt a.M./New York, NY: Campus.
- Huizinga, Johan (1955): *Homo Ludens: A Study of the Play-Element in Culture*, Boston, MA: Beacon Press [1939].
- Joost, Gesche (2008): *Bild-Sprache: Die audio-visuelle Rhetorik des Films*, Bielefeld: transcript.

- Juul, Jesper (2005a): *Half-Real: Video Games between Real Rules and Fictional Worlds*, Cambridge, MA/London: MIT Press.
- (2005b): Games Telling Stories, in: *Handbook of Computer Game Studies*, ed. by Joost Raessens and Jeffrey H. Goldstein, Cambridge, MA/London: MIT Press, 219-226.
- Kaemmerling, Ekkat (1971): Rhetorik als Montage, in: *Semiotik des Films: Mit Analysen kommerzieller Pornos und revolutionärer Agitationsfilme*, ed. by Friedrich Knilli, München: Hanser, 94-109.
- Kanzog, Klaus (2001): *Grundkurs Filmrhetorik*, München: Schaudig & Ledig.
- Klein, Naomie (2002): *No Logo: Taking Aim at the Brand Bullies*, New York, NY: Picardor.
- Klevjer, Rune (2002): In Defense of Cutscenes, in: *Proceedings of Computer Games and Digital Cultures Conference 2001*, ed. by Frans Mäyrä, Tampere: Tampere UP, 191-202.
- Knappe, Joachim (2000): *Was ist Rhetorik?* Stuttgart: Reclam.
- Konami (1986): *Castlevania*, NES: Konami.
- Kopperschmidt, Josef (2005): *Argumentationstheorie zur Einführung*, Hamburg: Junius.
- Kücklich, Julian (2006): Literary Theory and Digital Games, in: *Understanding Digital Games*, ed. by Jason Rutter and Jo Bryce, London/Thousand Oaks, CA/New Delhi: Sage, 95-111.
- Ljungström, Matthias (2005): The Use of Architectural Patterns in MMORPGs, Paper Presented at the *Aesthetics of Play-Conference* in Bergen, Norway, 14th-15th October, aestheticsofplay.org/ljunstrom.php.
- (2008): Remarks on Digital Play Spaces, in: *Conference Proceedings of the Philosophy of Computer Games 2008*, ed. by id., Michael Liebe and Dieter Mersch, Potsdam: Potsdam UP, 190-209.
- Lotman, Yuri M. (1977): *The Structure of the Artistic Text*, Ann Arbor, MI: University of Michigan [1972].
- (1990): *Universe of Mind: A Semiotic Theory of Culture*, Bloomington, IN: Indiana UP.
- Manovich, Lev (2001): *The Language of New Media*, Cambridge, MA/London: MIT Press.
- Martinez, Matias/Scheffel, Michael (1999): *Einführung in die Erzähltheorie*, München: Beck.
- Murray, Janet H. (1997): *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*, New York, NY et al.: Free Press.
- Mojang (2009): *Minecraft*, PC: Mojang.
- Molleindustria (2006): *McDonald's Video Game*, Browser: Molleindustria.
- Newsgaming (2003): *September 12th: A Toy World*, Browser: Newsgaming.
- Nintendo (1985): *Super Mario Bros.*, NES: Nintendo.

- Nitsche, Michael (2008): *Video Game Spaces: Image, Play, and Structure in 3D Worlds*, Cambridge, MA/London: MIT Press.
- Pajitnov, Alexey (1984): *Tetris*, Electronica 60: Pajitnov.
- Perelman, Chaim (1990): *The Realm of Rhetoric*, Chicago, IL: University of Notre Dame Press [1977].
- /Olbrechts-Tyteca, Lucie (1991): *The New Rhetoric: A Treatise on Argumentation*, Chicago, IL: University of Notre Dame Press [1958].
- Poser, Hans (2006): *Wissenschaftstheorie: Eine philosophische Einführung*, Stuttgart: Reclam [2001].
- Putnam, Hilary (1975): The Meaning of 'Meaning', in id.: *Minnesota Studies in the Philosophy of Science, Language, Mind and Knowledge*, Vol. 7, Minneapolis, MN: The University of Minnesota Press, 113-193.
- Salen, Katie/Zimmerman, Eric (2004): *Rules of Play: Game Design Fundamentals*, Cambridge, MA: MIT Press.
- Schrape, Niklas (2012): *Die Rhetorik von Computerspielen: Wie politische Spiele überzeugen*, Frankfurt a.M./New York: Campus.
- Serious Games Interactive (2007): *Global Conflicts: Palestine*, PC: Serious Games Interactive.
- Spurlock, Morgan (2004): *Super Size Me*, Film: USA.
- Taito (1978): *Space Invaders*, Arcade: Midway.
- Toulmin, Stephen E. (2007): *The Uses of Argument*, Cambridge, MA: Cambridge UP [1958].
- Ueding, Gert/Steinbrink, Bernd (?1994): *Grundriß der Rhetorik: Geschichte, Technik, Methode*, Stuttgart/Weimar: Metzler.
- Wiemer, Serjoscha (2008): Strategie in Echtzeit: Ergodik zwischen Kriegsspiel und Wirtschaftssimulation, in: *Strategie Spielen: Medialität, Geschichte und Politik des Strategiespiels*, ed. by Rolf F. Nohr and id.: Berlin: Lit, 213-248.

