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ADVENTURES OF *LUDOM*: A VIDEOGAME GENEONTOLOGY

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Dedicated to Pirjo, who taught me how to play life.

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Within the last few decades, the *videogame* has become an important media, economic, and cultural phenomenon. Along with the phenomenon's proliferation the aspects that constitute its identity have become more and more challenging to determine, however. The persistent surfacing of novel ludic forms continues to expand the conceptual range of 'games' and 'videogames,' which has already lead to anxious generalizations within academic as well as popular discourses. Such generalizations make it increasingly difficult to comprehend how the instances of this phenomenon actually work, which in turn generates pragmatic problems: the lack of an applicable identification of the videogame hinders its study, play, and everyday conceptualization. To counteract these problems this dissertation establishes a *geneontological* research methodology that enables the identification of the videogame in relation to its cultural surroundings. Videogames are theorized as 'games,' 'puzzles,' 'stories,' and 'aesthetic artifacts' (or 'artworks'), which produces a geneontological sequence of the videogame as a singular species of culture, *Artefactum ludus ludus*, or *ludom* for short. According to this sequence, the videogame's position as a 'game' in the historicized evolution of culture is mainly metaphorical, while at the same time its artifactuality, dynamic system structure, time-critical strategic input requirements and aporetically rhematic aesthetics allow it to be discovered as a conceptually stable but empirically transient unexistent phenomenon that currently thrives—but may soon die out.

Keywords: Videogame, game, puzzle, story, narrative, adventure, artifact, art, aesthetics, ontology, theory, media philosophy.

Turun Yliopisto

Historian, kulttuurin ja taiteiden tutkimuksen laitos

KARHULAHTI VELI-MATTI: *Adventures of Ludom: A Videogame Geneontology*

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Videopeli on kasvanut edellisten vuosikymmenten aikana tärkeäksi ilmiöksi niin median, talouden, kuin kulttuurinkin näkökulmasta. Kasvun myötä ilmiön itsensä määrittäminen on kuitenkin muuttunut yhä haastavammaksi: uudet leikin ja pelaamisen muodot venyttävät jatkuvasti 'pelin' ja 'videopelin' käsitteitä, mikä on jo nyt johtanut kivuliaisiin yleistyksiin sekä akateemisissa että populaarisissa kielenkäytössä. Kyseisten yleistysten seurauksena ne asioiden joukot, joihin 'pelit' ja 'videopelit' tänä päivänä viittaavat, ovat hämärtyneet äärimmäisen epäselväksi. Tämä hämärtyminen on tuonut mukanaan lukuisia käytännön ongelmia, jotka nousevat esiin ilmiötä koskevassa tutkimuksessa, kulutuksessa, kuin myös journalistisessa käsittelyssä. Edesauttaakseen näiden ongelmien ratkaisua luettavanasasi oleva väitöskirja esittelee *lajiontologisen* tutkimusmetodologian, joka mahdollistaa *videopelin* tunnistamisen suhteessa sitä ympäröiviin ja sitä muistuttaviin kulttuuri-ilmiöihin. Lajiontologista tutkimusmetodologiaa hyödyntäen väitöskirja ottaa tehtäväkseen tarkastella *videopelin* suhdetta neljään sitä ympäröivään tai muistuttavaan kulttuuri-ilmiöön: 'peleihin', 'puzzleihin', 'tarinoihin', ja 'esteettisiin artefakteihin' (ns. 'taideteoksiin'). Tarkastelut tuottavat *videopeli*-ilmiötä selittäviä *aspekteja*, joiden avulla sille rakennetaan alustava taksonominen identiteetti itsenäisenä kulttuurisena lajina (*Artefactum ludus ludus*, lyhyesti *ludom*). Löydetyt aspektit ja niiden mukainen taksonominen identiteetti puoltavat näkemystä siitä, että *videopelin* historiallinen asema 'pelinä' on lähinnä metaforinen. *Videopelin* esineellisyys, dynaaminen systeimirakenne, aika-kriittiset strategiset manipulointivaatimukset sekä (aporeettisesti) remaattinen estetiikka tuntuvat sen sijaan muodostavan vankan pohjan käsitteellisesti vakaalle mutta vain hetkellisesti menestyvälle kulttuurilajityypille, joka parhaillaan kukoistaa – mutta saattaa pian kuolla pois.

Avainsanat: Videopeli, peli, puzzle, tarina, kertomus, seikkailu, artefakti, taide, estetiikka, ontologia, teoria, mediafilosofia.

Adventures of Ludom: A Videogame Geneontology is an article-based dissertation. Five of the six articles have been issued in peer-reviewed academic publications, and one of them is currently undergoing peer-review in an academic journal. The previously unpublished chapters (pages 3–66) can be read before, after, or even without the articles. I have had so much contradictory feedback concerning the reading order that I hesitate to offer further advice. Still, if you are well familiar with game and videogame research, the first option gets my personal vote. The sequence in which the articles appear below follows the chronology of the introductory chapters, thus providing one path through.

If you end up citing the articles, please do not refer to this dissertation but to the original publication.

- Article 1 “Defining the Videogame” (2013) Article presented in the 7th Philosophy of Computer Games Conference ’13, Bergen, Norway, 2–4 October 2013. Undergoing peer-review in *Game Studies: The International Journal of Computer Game Research*.
- Article 2 “Puzzle Is not a Game! Basic Structures of Challenge” (2013) In *Proceedings of DiGRA 2013: DeFragging Game Studies*. DiGRA.
- Article 3 “Hermeneutics and Ludocriticism” (2015) *Journal of Games Criticism*, 2 (1).
- Article 4 “A Kinesthetic Theory of Videogames: Time-critical Challenge and Aporetic Rhematic” (2013) *Game Studies: The International Journal of Computer Game Research*, 13 (1).
- Article 5 “An Ontological Theory of Narrative Works: Storygame as Postclassical Literature” (2015) *Storyworlds: A Journal of Narrative Studies*, 7 (1).
- Article 6 “Fiction Puzzle: Storable Challenge in Pragmatist Aesthetics” (2014) *Philosophy & Technology*, 27 (2). 201–220. Published first in *Philosophy & Technology*, Special Issue (2013).

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Veli-Matti Karhulahti

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Introductions

Since this game plays best with an open hand, let me start with what I've got: the videogame isn't much of a game. What makes this oxymoron possible and perhaps even sensible is the denotative explosion of the word 'videogame' in daily language. If you understand 'videogame' in its shattered everyday sense and 'game' in its strict etymological sense, it soon becomes apparent that only part of the videogame phenomenon is truly gameful. Here 'strict etymology' does not refer only to the widely recognized relation between 'game' and 'amusement,' but to the further rooting that is arguably strongest in German:

Many scholars regard the Germanic word as showing a derivative formation (in **-ana-*) on a base that may ultimately be cognate with German *gumpen* and with a number of other verbs denoting **jumping or otherwise moving vigorously or irregularly**. An older suggestion is that the word may show a derivative (in *y-* prefix) ultimately from the same base as *man*, the semantic connection being sought in Gothic *gaman* **partner, fellowship**. (OED Etymology, *game*, n.; my bolding)

Naturally I do not intend to present the above disputed etymology as an undisputed fact, but merely as a support piece that motivates this dissertation. Science never deals with proof anyway, but with evidence. In the present context, then, the history of games can be seen as an evolution of two regimes of amusement: one that is defined by certain physical movements, and another that is defined by certain mutual interactions. While the two regimes unsurprisingly overlap, identifying them still facilitates noticing some major evolutionary tendencies.

Since many theoretical problems derive from neglecting or forgetting to distinguish between the literal and the metaphorical, I divide the two regimes into four differently construed premises:

- a *Moving vigorously or irregularly* – literally construed
I see the player moving physically.
- a_m *Moving vigorously or irregularly* – metaphorically construed
I see the player making something move.

- b *Partner, fellowship* – literally construed
I see multiple players.
- b_m *Partner, fellowship* – metaphorically construed
I see multiple player-like components.

Visibly, the ‘gameness’ of the videogame in this context is rather marginal in the literal sense. To start with, the videogamer as a moving player is a practical joke. While it is not uncommon to point out how technological advancements have recently introduced numerous kinds of kinetic input devices that demand significant physical movement, today (as it has been during the entire lifecycle of the phenomenon) the distinctive characteristic of videogame kinesthesia lies in the *reduction* of movement by the player.

The same can be said of the social side of videogames, which is normally related to the proliferation of so-called ‘multiplayer’ videogame play. While the increase of high-speed internet connections has predictably raised a towering surge of videogames in which players may (or may not) interact with other players’ avatars, I would not rush to correlate these activities with conventional forms of game play; and would at the same time keep in mind that the fad has not weakened the institution of single-player videogames to any notable degree.

Metaphorically construed, however, the vicarious action that takes place in the virtuality of the videogame (as a result of the player’s input) can well be considered a genuine relic of gameful movement. Likewise, if the videogame and its virtual components (friends or foes) are given a metaphorical treatment, almost all videogames can become games in the social regime. Videogames in general and single-player videogames in particular exist as games mainly in the metaphorical sense.

I must hasten to add that there is nothing wrong with metaphors, as long as they are convenient and controlled. Metaphors help to conceptualize phenomena that are difficult to capture by other means, and the videogame might well be one such phenomenon; the word itself consisting as it does of two signifiers the literal signifieds of which do not need to be present for the phenomenon to materialize. While videogame scholars might occasionally do well to follow biologists and define their subjects of study by Latin nomenclature instead of metaphorically industrialized discourse, I will stick with the ‘videogame’ for now and leave *Artefactum ludus ludus* for special occasions.

Now that my subject of study should be clear (once more: not the word but the phenomenon), it is fitting to provide some outlines of what is ahead. At the center of these outlines is a *demand-based theoretical framework*, the premise that all *cultural phenomena*, here understood as any conventionalized proceedings of intelligent animal behavior, set demands for those who wish to engage them. The function of my framework is an ontological one: to identify the videogame by theorizing its specific demands from assorted evocative perspectives. Within the confines of the undertaking at hand, I will consider four perspectives.

the videogame as a *game phenomenon*
 the videogame as a *ludic phenomenon*
 the videogame as a *story phenomenon*
 the videogame as an *aesthetic phenomenon*

As you may notice, only the first of the above perspectives approaches the videogame as a game. This is because only part of ‘videogameness’ seems to intersect with ‘gameness’ (in the given sense of the word). Keep this in mind.

Finally, it is probably good to make clear that when I talk about the videogame as an ontological phenomenon I do not mean to refer to it as a bona fide collection of items but as a conception that I deem the most adequate representation of its assumed collective image; or in terms of social ontology, as the most plausible ontological belief. This echoes linguist Roman Jakobson’s (1973) aged but still acute vision of the object of literary science as “not literature but literariness” (62). Congruently, while I shall repeatedly address my object of research as the ‘videogame,’ a more precise term would doubtless be ‘videogameness’ in all of its aspectual diversity, *per stirpes*. The goal of this project could thus be summarized as the discovery of those ontological aspects that most people, consciously or not, entertain as the major distinguishing factors between the videogame and the cultural phenomena that surround it (in the West).

Most succinctly, I offer an interpretation of what the videogame is.

Ludo-ontology

It is not relaxing to write about videogame ontology, even though nothing too much has been said yet. This is exactly because *something* has been said, and I must build my work on that. This something contains, *inter alia*, a fine variety of early sketches (Crawford 1984; Laurel 1986; Graves 1987; Ziegfeld 1989; Andersen & Holmqvist 1990), a collection of pioneering patterns by Staffan Björk et al (2003; Björk & Holopainen 2005; Björk & Lankoski 2007; Brusk & Björk 2009), the ambitious project of José Zagal et al (2005; 2008; Zagal & Mateas 2007; 2010; Fernández-Vara et al 2005), and of course Espen Aarseth’s extensive work (at least from 1996 onwards). I could go on a bit more, but the question is already there: did I not just state that nothing too much has been said yet?

I should clarify my notion of ‘ontology’ before things get too messed up. With the word’s origins in the Greek *onto*, ‘being,’ modern Western science has come to recognize ontology vaguely as “the study of what there is” (Hofweber 2013, n.p.). For videogame research, ontology could therefore be taken as ‘the study of what a videogame is,’ and there are quite a few ways to answer that question, no doubt. One could submit a formal definition (Esposito 2005), a survey on physical components (Kirschenbaum 2008), a catalogue of data units (Roman et al 2011), or a philosophical account based on epistemology (Mosca 2011). It might be possible to categorize some major approaches, such as information

scientific, existential, social, and structural ontologies, but since the overlap is colossal, let me just leave it there.¹

When I talk about ontology I am not concerned simply with definitions, although most ontological models can be turned into one. While the data units of computer scientists fall out of scope, I will definitely touch on physical as well as philosophical areas of inquiry. The idea, however, is not to circumscribe an explicit perspective from which to determine my subject, but rather to advance an ontological structure that builds on the phenomenon's position in relation to the immense array of other cultural phenomena. In one sense, the ontology at hand could thus be said to follow the already walked path of 'structuralist' ludo-ontologies that function as taxonomy-enabling models without being taxonomies themselves.

Before expounding any ludo-ontological methodologies further, you need to be warned about associating my position with a certain philosopher of language and his family *resemblances*: what I am primarily concerned are the concealed *differences* that have the potential to distinguish the videogame from other things. This is where I depart from the majority of structuralist ludo-ontology.

By the 'majority' I point mainly at those structural ludo-ontologies that could be called *open* in common. To name some pioneering contributors to this category, the first who come to mind are Björk & Jussi Holopainen (2005), Zagal et al (2005), Aarseth et al (2003), and Christian Elverdam & Aarseth (2007). The first two of these I specify as *augontologies* (Lat. *auctus*, 'to increase'), for they operate by the principle of extension: new onto-elements are continuously added to them, the most critical constraints thus being the ontologists' time and the renewal of funding. Seven years ago Zagal et al (2008) announced that their ontology already consisted of "more than 190 elements" (14). As for the latter two, I follow their authors and call them *typontologies* in accordance with the more limited but still open-ended assembly in which "individual dimensions can be modified, added, or rejected" (Elverdam & Aarseth 2007, 4).

To prevent misunderstandings, I do not mean to imply that augontological or typontological game and videogame research is unsophisticated or inadequate. Elverdam & Aarseth as well as Björk & Holopainen (2005) all remark that they are contributing to the field of design to which their results might certainly be of great use. Zagal & Amy Bruckman (2008), in turn, have pointed out how augontologies, if successful, may enrich associated discourses and so facilitate communication of their topic (for more underpinnings, see Holopainen et al 2007; Chan & Yuen 2008; Dahlskog et al 2009; Lessard 2014). What I do imply, nevertheless, is that both the augontological and typontological answers to

¹ As the following pages show, the videogame is a phenomenon far too complex to be theorized merely as a category of games. Hence I will not use the term 'game studies' in its customized sense to cover both game and videogame research (and often other ludic research too), but I do have games and videogames labeled as respective subjects of study. Usually this means referring to their studies jointly as *game and videogame research*.

what a videogame is, even though they are structural, will never produce a structure. It would not be totally unfounded to think of such self-contained structures as ‘theories.’²

Ontologies and theories are nowadays both regularly described as structures, yet whereas the structures of the former are often thought of as *sets of particles*, the structures of the latter tend to be seen as *sets of consequences*. Within that rubric it is tempting to conceive of ontologies as the indispensable construction material for theories, but as Willard Quine’s (1968) classic analysis has shown, this need not be the case: an ontology is meaningless for any theory “insofar as the theory is considered in and of itself” (210). All non-closed structures are relational by nature, and as such in just the same way that theories can stand on ontologies, ontologies can also stand on theories. The described theoretical basis delineates my present ontological aspirations, and brings you back to my claim concerning ludo-ontological shortage. As to theoretically grounded videogame ontologies, nothing too much has been said yet.

A theory-driven way of doing ontology (and research in general) is fairly antique, in fact. Andrea Nightingale’s (2004) enlightening analysis of Ancient Greek discourse reveals that in the traditional practice of *theoria* the theorist, before all noematic work, physically “journeyed to an oracular center or festival, viewed the events and spectacles there, and returned home with an official eyewitness report” (3). This method of collecting ‘theories’ into a coherent set of consequences by literal journeys was still practiced by Plato, and it was primarily Aristotle who came to redefine *theoria* as reasoning that alone unites “all principles and causes” (236); thus detaching the elements of mobility and analytic variety from the notion of ‘theory.’ In the (more) original sense of the word, then, a ‘theoretical’ ludo-ontology is not concerned too much with the assumed formal particles of the videogame (the *what*) but rather with the ways in which those particles behave as they are carried to distinctive environments (the *how*). These theoretical journeys, theories of videogames, are the basis of the methodology I am addressing here.

I cannot find a better explanation for the lack of theoretically motivated game and videogame research than the unfortunate circumstance of ‘game’ becoming the engine of modern onto-theoretical nihilism. The principles of that philosophy are nicely revealed through Daniil Kharms’s (1993) flash fiction:

Semyon Semyonovich, with his glasses on, looks at a pine tree and he sees: in the pine tree sits a peasant showing him his fist. Semyon Semyonovich, with his glasses off, looks at the pine tree and sees that there is no one sitting in the pine tree. Semyon

² Zagal et al (2005; 2008) specifically stress that their approach is distinct from the “attempts to answer the question *what is a game*” (3). However, by that caveat they aim at disconnecting their work only from formal definitions that try to “distinguish between games and nongames” (ibid.) and not from the fundamental *what is a game* that motives ludo-ontology by definition.

... Aarseth’s (2011) ludo-ontological stance is not unequivocal either. On the one hand he does state that the “task for an ontology of games is to model game differences, to show how the things we call games can be different from each other in a number of different ways” (50), on the other hand he seems to be reluctant to find any differentiating aspects between games, videogames, and other ludic phenomena such as puzzles (52–53).

Semyonovich, with his glasses on, looks at the pine tree and again sees that in the pine tree sits a peasant showing him his fist. Semyon Semyonovich, with his glasses off, again sees that there is no one sitting in the pine tree. Semyon Semyonovich, with his glasses on again, looks at the pine tree and again sees that in the pine tree sits a peasant showing him his fist. Semyon Semyonovich doesn't wish to believe in this phenomenon and considers this phenomenon an optical illusion. (52)

Just as Semyonovich decides to disregard the perplexing situation by labeling it an 'optical illusion' produced by his sight-sharpening glasses, an increasing number of game and videogame scholars decide to avoid theoretical approaches to 'games' and 'videogames' because advanced investigations reveal those topics to be complex. While skepticism is certainly one of the most valuable tools in research, its paralyzing side effects can also be an encumbrance.

As to the denunciations of standard formalist ontologies, one can find the 'definition trap' already being criticized in pre-modern videogame research (Solomon 1984, 9–10). For a more recent and broad-spectrum doubter I cite a contemporary expert, Ian Bogost (2009), for whom the videogame is a "mess we don't need to keep trying to clean up, if it were even possible" (n.p.). In the abstract, such *anti-ontologies* reject ludo-ontological research based on the assumption that its goals are absurd. In the practice, such anti-ontologies end up sustaining the monarchy of open ontologies at the expense of theory.³

It does not take too much effort to see the political advantages of open- and anti-ontological attitudes. By not limiting her or his scope of research the scholar will always have an open field of study; a field that can be expanded whenever the harvest runs dry. Everything is, after all, part of the big family of games, right?

On the other hand, it would not be totally groundless to speculate that open- and anti-ontological positions were a vital factor in establishing the study of games and videogames as an organized discipline (see Mäyrä 2005; 2008; Mäyrä et al 2012; 2013). After the recognition of 'games' as an adequate subject of study (see Aarseth 2001; 2002; 2005; 2006; cf. 1997) the question was no longer whether the topic was worth distinct academic attention but rather how broadly the notion of 'game' should be understood. Taking into account the word's exhausted metaphorical past, almost anything can be studied as a 'game;' further, 'games' appear to be able to contain almost anything. In this light, identifying 'game' or

³ Bogost's position as an anti-ontologist is naturally determined here by the specific discourse in effect. I should thus make a note on his pro-ontological contributions too, such as those based on Alain Badiou's set theoretical ontology (Bogost 2006) and Graham Harman's object-oriented ontology (Bogost 2012). While it might be possible to associate both Badiou and Harman with the present (semi-formalist) onto-theoretical approach, Bogost's applications of them for his 'unit operations' and 'alien phenomenology' seem to participate in a very different discussion, leaving room for the stated ludo-ontological pessimism: "I am suspicious of the zeal with which the burgeoning field [of game and videogame research] has relied on formalist approaches to its object of study, especially its approaches to ontology, typology, and classification" (2006, xii). See also Bogost (2008).

... Ontological liberalism (and nihilism) are by no means unique to game and videogame research, of which the persistently advancing 'narrative imperialism' (Phelan 2005) functions as a topical corroboration.

‘videogame’ with a limited theoretical frame would also mean abandoning a weighty case of research futures—which might indeed seem a foolish move.

The incapability or unwillingness to see a difference between *what can be studied through the discipline* and *what must be studied through the discipline* does, nevertheless, bring in its train a vast amount of research the shortsightedness of which will manifest only in time. The premise that “games are different,” as Philipp Schweighauser (2009) triumphantly declares, “in some cases serves as a mere cover for a fairly shameless promotion of one’s own fledgling discipline” (116). Not everything I encounter in videogames is distinctive to videogames, and overlooking that fact produces scientific results that are valid only as long as I do not consider anything else but videogames. It is not uncommon to find scholars still define this ludic phenomenon by ‘interactivity’ (Tavinor 2009, 53–60), ‘ergodicity’ (Sicart 2009, 47, 66), and other concepts which may in proper hands reveal something to you about the subject—yet which simultaneously encapsulate the entire input revolution of the present age. Aspects of videogames do not become defining aspects of videogames *ipso facto*, but in relation to other cultural phenomena.

Ludom

There are aspects of videogames that distinguish the videogame from other cultural phenomena, and aspects that videogames share with other cultural phenomena. In this dissertation I am concerned with the former, discriminating aspects. To pick out these videogame-identifying aspects from aspects that are considered ludic or game-like in general, ‘aspects ludiques’ (Morrisette 1968, 159), let them be henceforth referred to as *ludom aspects* (‘aspects ludoms’) after the Latin *ludus* and *dom*, ‘play’ and ‘house;’ with the hope being to capture the material specificity of this artifactual ‘playhouse,’ *ludom*. Two notes are worth making here. First, no ludom aspect is universal but rather is always reliant on a contra-phenomenon. Second, some aspects gain ludom status more often than others (and are thus more useful for identification purposes).

To pave the way for these ludom aspects, I evoke Olli Leino (2007; 2010) who differentiates between ‘deniable’ and ‘undeniable’ videogame content. He describes the former as “content whose taking seriously is mostly voluntary” (iii) and the latter as “crucial in terms of fulfilling the gameplay condition” (ibid.), i.e. crucial if the player wishes to remain as a videogame player. If I ignore the undeniable part of *Tetris* (Pajitnov, 1984) that makes horizontally assembled tetromino blocks vanish, my being as a *Tetris* player will soon come to an end. The same happens in *Super Mario Bros.* (Nintendo, 1985) if I neglect the fact that bumping into turtles causes Mario to ‘die.’ On the other hand, story components in *Mario* and the colors of tetromino blocks in *Tetris* belong to deniable content because they can be overlooked without any direct effects on the gameplay condition.

Leino’s experiential ontology functions as a helpful lens for picturing the current ludom-ontological situation. Every student of videogames at least senses that there are some

undeniable ludom aspects or aspect combinations that identify the phenomenon. If this were not the case, the study of videogames would never have come to complement the studies of other cultural marvels. Yet, theorizing the ludom aspects of videogames is not as simple as theorizing videogame content: one cannot just play videogame *culture* to see which parts are undeniable.

Second Life (Linden Research 2003) works as an exemplary product that is often connected to the videogame, but on a deeper level has a very distant relation to it. While it does resemble the members of the videogame family, not all resemblance is family resemblance. As Heather Gert (1995) has courteously corrected, “members of a human family bear family resemblances to one another because they belong to the same family, they don’t belong to the same family because they resemble one another” (5). The search for family resemblances of videogames thus comes closer to structural archeology than perception. For anyone who has actually tried *Second Life* its ludomic status is at most that of a bastard, which a serious player of modern-day culture could never disregard but a videogame scholar can. For better or worse, “plastic surgery can’t make you a Rockefeller” (2).

I began this introduction with an etymologically assisted claim that gameness is only one of the multiple ontologically significant aspects of the videogame phenomenon. Nevertheless, as you—a player of videogames—well know, this particular gameness is normally also the compulsory aspect of the phenomenon in the sense that lacking it does make the player conceive of the object either as a ‘bad videogame’ or not a videogame at all. Either way, the identity of the videogame does seem to depend heavily on its gameness, bearing in mind that the ‘gameness of the videogame’ is not necessarily the same gameness that defines other game-things. The reality that videogame scholars choose their subjects of study not by cultural recognition but by ludomic presumptions is the strongest evidence for believing that some family-identifying ludom aspects do exist.

So how do you unearth these ludom aspects, technically speaking? Perhaps by gathering a library of existing videogame mechanics (Järvinen 2008), interrogating the videogame discourse (Consalvo & Paul 2013), or by mapping out videogame regularities (Mosca 2014)? Not here. My methodology is rather a hermeneutic one: based on an abstract preconception of what the videogame is, I theorize that preconception in relation to my preconceptions of the phenomena that surround it. The outcome of those theoretical juxtapositions is a set of ludom aspects: a set of properties that the videogame has but the contra-phenomenon does not. These phenomenal relationships ultimately explain *how* the videogame exists—if one agrees to see it as such.

Consequently, unlike augontologies and typontologies that are concerned with aspects that potentially appear in videogames, the coming chapters chase after the aspects that are missing when videogameness is in doubt. Without ignoring the most ludomic videogames, the prime time will usually be spent with those videogames the ludomicity of which is most doubtful, that is, less with *Pong* (Atari 1972), *Civilization* (Microprose 1991), and *Halo* (Bungie 2001); and more with *Adventure* (Crowther & Woods 1977), *SimCity* (Maxis 1989), and *Heavy Rain* (Quantic Dream 2010). Before initiating these explorations, however, I still need to disclose the underlying ontological methodology to its full.

Geneontology

This seems like a proper place to invoke Aarseth's (2011) call for "more sophisticated ontologies of games" that are to "succeed the current ones" (66). In using the plural 'ontologies' I take him to mean not the unavoidable fact that every scientific model will sooner or later be superseded or refined, but rather the awareness that a single ontology, however extensive, will never draw a comprehensive picture of its subject's existence by itself. This skepticism, which I consider a rather healthy one, can be supported by the perception that videogames and their ludom aspects do not live in a vacuum but in relation to a multiplicity of cultures and media. Correspondingly, no ludom aspect can be descriptive of the videogame by itself, but gains its ludomic status only as a differentiating factor between the videogame and a specific contra-phenomenon.

A sequence of the differentiating relationships between the videogame and the cultural phenomena that surround it embodies the ontological structure of the videogame's existence. It would be easy to censure, however, that since culture and media are protean, there are no grounds for discussing the videogame as a single ontological phenomenon to begin with. This view, I argue, is both indolent and incorrect. I will back the argument by offering a final survey of my methodology, which shall henceforth be referred to as a *geneontological* (Greek *genos*; 'race' or 'kind') approach to ontological videogame research: a systematic method of study that I believe will hold quite well against anti-ontological ludo-criticisms without falling into the deepest pitfalls of stationary definitions (cf. Salen & Zimmerman 2003; Juul 2005; Galloway 2006; Frasca 2007; Malaby 2007). As I am not aware of such approaches in any previous ontological research, feel free to make note of a methodological contribution.⁴

By geneontology I imply a methodology that pursues an ontological structure for a target phenomenon by theorizing the (above-described) differentiating relationships it has with other cultural phenomena. Accordingly, the geneontological structure of the videogame,

⁴ It is worth a footnote to make sure that my geneontology will not be confused with the philosophical versions of 'genealogy.' For that I most naturally point to the works of Friedrich Nietzsche (1956) and Michel Foucault (1977), which aim at exploring the histories of human subjects like "morals, ideals, and metaphysical concepts" (152). The non-minor difference is that my methodology deals with phenomena that are not historically evolving concepts but ahistorical transient entities (the existences of which may nonetheless extend over lengthy temporal eras). For those who are interested in finding points of *tertium comparationis*, more fruitful sources would probably be the 'thing theory' within the general area of cultural criticism (see Brown 2001), the 'gene ontology' project in the field of bioinformatics (see Gene Ontology Consortium 2010), and the 'ontographies' of contemporary metaphysics (see Bogost 2012). Compare also with Juul's (2000) early attempt to "define games in relation to other phenomena" and his later "classic game model" (2003).

... This is also where I draw a strong connecting line to media studies, the discipline within which this dissertation has been realized. Next to the heavy (re)positioning of the videogame within the fields of culture and media, perhaps an even more significant input to my institutional home discipline is the addition of geneontology to the toolbox of media ontological methodologies. It would be fascinating to study general media history through the variety of phenomenal geneontologies that have prospered, vanished, or (as most of them do at least to some minimal degree) survived. You could also draw similar lines of interdisciplinary application from a few other concepts that I introduce later, such as 'rhematics,' 'uniexistentiality,' and 'cinexistentiality.'

videogame geneontology, is not achieved by a focused close analysis of the videogame alone but by a relational ‘logistical’ analysis in which the videogame is transported to various cultural surroundings via respective theoretical journeys. The aim is hence not to build an augontological or typontological inventory of items that have been found in videogames (and non-videogames) or a fixed definition of what videogames are, but to dissect those parts of the videogame machine that can be taken away without it ceasing to run in specific environments. These undeniable parts are the ludom aspects that play the dominant roles in the intricate genome of the videogame.

Whereas a ludom aspect (or a combination thereof) has an undeniable ontological function in relation to at least one cultural phenomenon—i.e. its absence would leave no difference between the two—in relation to another cultural phenomenon its ontological function may be deniable. For instance, whereas strategic input distinguishes (story)videogames from the literary tradition, it does not distinguish videogames from games; and whereas artifactual performance evaluation distinguishes the videogame from games, it may not distinguish videogames from other ludic artifacts. Videogame geneontology is thus an extremely complex system of particles the construction of which means discovering those disconnections from the corpus of connections that chart out its entangled network of identifying relations.

Geneontological connections and disconnections may contribute to open ludo-ontologies, and *vice versa*. Discovering ludom aspects unveils concepts that may be used to enhance augontologies and typontologies, whereas the vocabulary developed by the latter facilitate dealing with geneontological findings. The relationship between the two approaches is thus not dichotomic but symbiotic, for which the overall ludo-ontological progress will depend partly on their capability to syndicate outcomes.⁵

Yet a critical question is still unanswered; namely, how is a geneontology of videogames a project less open than the endlessly enlarged and reorganized augontologies and typontologies? Because culture keeps on evolving as long as there is someone to consume it, the interrogation can be split into two respective criticisms:

- C1 The videogame alters in time, so a geneontology of videogames is aimless.
- C2 The culture surrounding the videogame alters in time, so a geneontology of videogames is aimless.

To begin with C1, I must first accept the indisputable fact that all biological and cultural species transmute within their environments insofar as they endure. In the same way that the present *Homo sapiens sapiens*—whose genome took two decades to be completed in 2003—is related but hardly identical to those *Homo sapiens idaltu* and *Homo sapiens neanderthalensis* that walked the Earth with (and before) it some thousands of years ago, the videogame, *Artefactum ludus ludus*, should not be identified as solitary but rather as

⁵ I keep on using the term ludo-ontology (not ludom-ontology) throughout the dissertation because some of my interlocutors pursue ontologies that try to hem in both the game and the videogame phenomena (which I personally do not consider productive).

a specific species of its taxon. The substance of videogame geneontology is thus not the videogame as an eternally evolving essentialist conception but the videogame as a contemporary instance of cultural evolution. Gilbert Simondon's (1980) recently revived philosophy of technology has a point:

It is not the production-line which produces standardization; rather it is intrinsic standardization which makes the production line possible. (17)

Even though Simondon cannot be applied here directly, his ideas on technological genesis can be used as a frame in which the evolution of culture “involves stages that are definable by the fact that they bring into being successive systems of coherence” (21). As already indicated, I am not, however, comfortable with the idea of the videogame itself as an evolving conception: what preceded it was not a videogame, and what comes after it will not be a videogame either. So while the videogame geneontology presented here might be regarded as a specific evolutionary ‘stage’ of cultural evolution, I remind that this ‘evolution’ must not be attached to the distinct videogame which as a phenomenon is immutable and transient, *unexistentiel*.⁶

A logical consequence of the above is that the videogame, as a contemporarily identified instance, will most probably die out some day (not unlike all but one species of hominids have done). While I altogether undersign the ‘game’ axiom as a cornucopia that never ceases to breed (cf. Murray 2004), I am still ready to face the demise of ‘videogames’ if the word one day comes to signify a phenomenon that shares none of the ludom aspects that define current *Dooms*, *Pac-Men*, and *Needs for Speed*. If in that unimaginable future those hypothetical ludo-objects are still called ‘videogames,’ a new geneontology and discipline will be in demand to advance their theorization.⁷

To answer C2, I begin again by acknowledging the facts: if the videogame were to survive considerable epochs of time, its geneontological identification process would definitely take its time as well. That process is not about cumulative expansion, nevertheless, but about the phenomenon's dialogic re-identification in relation to the cultural species that emerge along its lifespan. Just as innovations in the film industry lead to a re-identification of early ‘cinema’ as ‘silent film,’ the videogame, as I see it here, will eventually be re-identified in relation to its future revolutions. In methodological terms, the variety of ludom aspects that identify the videogame may fluctuate, yet not due to any ontological alterations in the conceptually stable phenomenon itself (as in typontologies) but due to the altered environment that surrounds it.

⁶ Here I find myself supported by Erkki Huhtamo's (2005) media archeological research, which concludes that the videogame “cannot be traced back to any single source. It emerges from a slowly evolving, complex web of manifold cultural threads and nodes” (16). Compare to the ‘genetic’ and ‘pragmatic’ modes of explanation in Wilhelm Dilthey's (1985) study of the origins of hermeneutics (published in German in 1860).

⁷ This was exactly why *Game Studies: The International Journal of Computer Game Research* was established despite the multiplicity of already existing game journals like *Simulation & Gaming* and *Gaming Research & Review*. My guess is that at least one more new journal will soon be needed for the study for those game-things that I call ‘storygames’ here.

In the rest of this work I aim at establishing a geneontological bedrock for the videogame by studying it within what was a moment ago referred to as a ‘demand-based framework.’ This means analyzing the videogame through theoretical perspectives based on the demands the videogame sets for its players. Each theory approaches the videogame *as* and *in relation to* a specific cultural phenomenon, and so, in the process, offers ludom aspects that appear to be the most significant distinguishing factors between them. The final chapter will conclude by answering two concerns that I consider best left to the end: the benefits of restricting my notion of ‘game’ as well as ‘videogame,’ and the general utility of videogame geneontology.

1. Resolutions

In her too rarely mentioned article on contemporary research politics, Marinka Copier (2003) discusses game and videogame research as a paradigmatic emerging discipline whose initial concern is to decide “which games should be studied [and] which methodologies and theories should be used” (405). To me Copier’s remark functions as a critical reminder about the subjectivity of the demand-based theories that I am about to present: they can ultimately be nothing but my personal belief as to which circumstances are best suited for the videogame’s identification. My ambitions are, after all, not solely logical but ontological too.

Still, there happen to be various significant differences between those beliefs that are grounded on their holder’s idealistic premises of what the videogame should be, and those beliefs that are grounded on their holder’s methodical premises of how the videogame could be considered extant most reasonably. Hopefully this brief notation is enough to indicate my regard for the latter group. The demand-based framework is a premise for developing that image which I believe provides the strongest cultural identity for the videogame phenomenon.

To repeat one last time, the premise of the demand-based framework is that all cultural phenomena set different demands for their use. The framework enables different theoretical outcomes, which depend on the phenomenon that is set in it and the perspective from which the phenomenon is addressed. The ensuing subsections provide four theoretical perspectives on the videogame within the demand-based framework: a game-theoretical perspective (1.1.), a ludo-theoretical perspective (1.2.), a story-theoretical perspective (1.3.), and an aesthetico-theoretical perspective (1.4.).

1.1. A Game Theory of Videogames

More about this theory in Article 1, “Defining the Videogame” (2013).

A decade ago design researchers Robin Hunicke et al (2004) questioned one common view of games by claiming that they are “more like artifacts than media” (2). The claim was backed by an assumption that the “content of a game is its behavior—not the media that streams out of it towards the player” (ibid.). While there is unquestionably a point in their remark (without picking on the word ‘media’), for you and me these lines also contain a detail worthy of caution: they do not address videogames but games. From a design position thinking about football and live-action roleplaying as artifacts might be justified by practical benefits (e.g. Nelson 2011), yet from a theoretical standpoint the generalization would require more analytical care. I leave generalities aside, for now, and concentrate on the videogame.

Initially, what makes approaching the videogame as an artifact a theoretically worthwhile effort is not its relation to ‘media,’ at least not if the word is understood in Friedrich Kittler’s (1999) technology-focused tradition of transmission machines (my point of view). To repeat, the ‘interactive’ or ‘ergodic’ elements that are found in videogame artifacts have been a feature of practically all media as long as the word has existed. Even if I move to consider the videogame not only as an ‘interactive’ or ‘ergodic’ artifact but as a cybernetic one with considerable computational capabilities, the fact remains that such mechanical aspects are hardly enough to distinguish it from media technologies whose volume of computerization increases year after year. Instead, what does make approaching the videogame as an artifact a worthwhile effort, I claim, is the preconception of it as a game.

A lasting point of confusion in game and videogame research has been the double life of the ‘game’ as a process-object: there is a game going on (a process), and that game is football (an object). On the other hand, the life of the ‘videogame’ seems to be monotonous: you would not say that there is a videogame going on; the videogame is always the game that is going on (cf. Galloway 2006). This is the point of departure in the present attempt to identify the videogame as an *artifact* and videogameness as specific *artificiality*, such artificiality being the ludom aspect that distinguishes the videogame from other game-things.

I commence with the well-established etymological notion of games as phenomena that implicate ‘gay time’ or ‘amusement’ (Bakhtin 1968, 130). Obviously this cannot be applied so that every amusement is a game, for in that case the term ‘game’ would be dead. I therefore narrow down the notion of games as amusement a little by recalling Huizinga’s (1944, 15) view of the game play ritual as ‘methectic’ rather than mimetic; that is, all games must involve the possibility for its *performing* player to be amused. This comes to fruition normally as the player ‘succeeds’ in one way or another, with the caveat that she or he may ‘fail’ as well (see Frasca 1999). In what follows I show how in videogame play such ‘successes’ and ‘failures’ are best analyzed as emotional responses

to altering videogame states, and how the artifactuality of those state alterations can be considered a factor that identifies the videogame as a game.

So far the most advanced (but hardly the first: compare Greenfield 1994 to Sotamaa 2014) theory of videogames as artifacts has been developed by Leino (2010). He sees videogames as Ihdean technological artifacts that enforce “a particular mode of use onto those who desire to be their users” (180). Since my theory of ludomic artifactuality draws nontrivially from Leino’s achievements, he merits a brief introduction.

To save the reader from returning to the introductory chapter, I will recapitulate Leino’s gameplay condition as the player’s “attempt to remain a player” (150). Artifactually, the gameplay condition is a material feature that requires the player to act in a specific way if she or he desires to continue playing *the* (not *with* the) videogame. Here a central proviso is made: Leino’s artifactuality concerns only single-player videogames. This is because the social aspects (which were earlier suggested as one of the original ‘game’ dominators) of multiplayer videogames have the potential to impose gameplay conditions that exceed material limits, for instance, when players get kicked out of guilds by other players in *World of Warcraft* (Blizzard 2004).⁸

Based on the above, Leino separates three potential modes of solitary play:

... mere *playing* (as in a child’s freeform play), *playing with* a single-player computer game (as in freeform play involving a single-player computer game), and *playing a single-player computer game*. The first activity is not delineated by a gameplay condition. The second may be, but this condition is not, however, enforced anywhere else but in the player’s mind. In the first and second cases, playing is a project like any other project one might take on, and can be thus reshaped and restructured at will. The last of the activities is delineated by the gameplay condition and the condition is enforced by the materiality of the game artefact. (153)

So whereas the former two activities can continue as long as the player desires, the last activity is regulated by the imposed gameplay condition. To use the most illustrative example, I can play *with Tetris* as long as I want, but *playing Tetris* lasts only as long as I fulfill its gameplay condition. The gameplay condition, in turn, is already defined by the specific artifactuality of *Tetris*, for its existence as a creation becomes valid only through use:

⁸ The distinction between single- and multiplayer videogames is vague. While some single-player videogame artifacts can be played together with a friend via split-screen, some multiplayer videogames artifacts can be ‘won’ without any player-to-player interaction. As the coming pages suggest, it would perhaps be better to talk about videogame artifacts that provide one or multiple ‘player positions.’ For a brief review of the single-multiplayer dilemma, see Jaakko Stenros et al (2009). For a very brief review of the single-multiplayer dilemma, see Daniel Joseph & Lee Knuttila (2014). I would not mind finding longer reviews of the single-multiplayer dilemma.

... Multiplayer videogames differ greatly in systemic complexity, too. As usual, Edward Castronova (2003) finds the right words: “A massively multiplayer online roleplaying game like *EverQuest* is infinitely more complex than chess; it is not even clear what ‘victory’ means” (n.p.).

Characteristic of game artefacts is that they situate themselves into hybrid intentionality relationships with their players, and allow the human experience to assume modalities which would not otherwise be possible ... The player, unlike the human carrying a pacemaker, is there to serve the artefact: she can play or not play, but what play implies is often dictated univocally by the game artefact. (244)

The gameplay condition, as explained by the hybrid intentionality relationship, offers a firm foundation for ludomic artifactuality. While I am sympathetic with Leino's thesis of the videogame player as one who pursues states that are obstructed by resistance and avoids states that undermine the activity, I still find the notion of 'enforcing' particular modes of use slightly deficient for determining ludomic artifactuality. This is due to the extreme theoretical complexity of both 'resistance' and 'undermining' that correlate with 'success' and 'failure,' or in more friendly terms, 'wins' and 'losses.'

The idea that videogames resist some player efforts is a ludomic datum of a sort. In Björk & Holopainen (2005) this is addressed as the 'committed goal' that players have to strive for: "if they are not working toward these conditions, they are not playing the game" (336). The formulae for determining such resistance appear to lie outside theoretical facilities, nonetheless. *Tetris* resists many things (e.g. piling only square tetrominos), yet just few of them seem to count as successes that correspond to its 'particular modes of use.' This concerns also the 'game over' states that are supposed to undermine the activity: as much as I keep on failing in *Tetris*, I can always start over. I am fairly convinced that videogames can never (en)force me to act in a 'particular' way even if I salute their gameplay conditions by fighting resistance and maintaining my player position.⁹

Preserving Leino's gameplay condition as the factor that distinguishes 'videogame play' from 'playing with a videogame,' I now postulate a modified theory of ludomic artifactuality. Importantly, the theory adopts ludic artifactuality as a feature that distinguishes the videogame not from other artifacts, but from other games. The question I am presently concerned with is thus not whether *Second Life* is part of the videogame species or not, but what distinguishes the 'wins' and 'losses' of the videogame *FIFA07* (EA 2006) from those of mundane football.

I continue with a rough hypothesis of 'winning' and 'losing' in videogames: winning assumes the videogame to contain one or more states of success, ergo positive performance alters the videogame state towards 'victories' and *vice versa*; losing assumes the videogame

⁹ An exception for this could be a videogame that follows the self-destructive materiality of William Gibson's one-read book *Agrippa* (1992). At least one videogame has already been developed along these lines: in *Glitchhiker*, an online multiplayer videogame produced at Global Game Jam 2011, every time a player 'died' one of the artifact's hundred lives was deducted. At zero, *Glitchhiker* was programmed to erase its own code. *Glitchhiker* was extinct in less than seven hours. Visibly, the economic potential of such an artifact appears quite limited, for which reason it is not entirely absurd to conclude that the market condition precludes the gameplay condition. On the other hand, factual gameplay conditions could be said to emerge also in the coin-operated arcades that require monetary investments to run but this would bring along the concern of purse size. See also Gonzalo Frasca's (2000) essay that was well ahead of its time.

to contain one or more states of failure, ergo negative performance alters the videogame state towards ‘game overs’ and *vice versa*. Both tropes, however established in common parlance, seem yet to lack theoretical validity.

Talking about ‘winning’ or ‘losing’ a videogame entails assuming the unorthodox premise that the artifact is a reasoning opponent. To factually win or lose a videogame would mean achieving a superior or inferior result in a contest, which entails a mutual agreement to rules between competitors (cf. Delattre 1975; Dixon 1999; Hämäläinen 2013). The videogame, as a non-reasoning opponent, is not capable of mutual agreements. What the player experiences as competitive resistance, as notes Steward Woods (2007), is hence merely an illusion of “contest where none is actually present” (9). To paraphrase, you can never win but you can always think you won. While no other players are involved, ‘winning’ and ‘losing’ in videogame play are thus misnomers. Let me open them up.

‘Winning’ and ‘losing’ videogame states seem to derive from two different cultural closures: that of competitive non-videogame games and that of conventional narrative artifacts (cf. ‘ending’ in Heidegger 1962). Whereas the function of the former is to define *resolution*, the function of the latter is to define *termination*. The difference becomes apparent in their opposing principles: in non-videogame games like ice hockey termination is subordinate to resolution (if unresolved, overtime follows), in narrative artifacts like films resolution is subordinate to termination (if unresolved, ending follows anyway). ‘Winning’ and ‘losing’ videogame states can thus be understood as either resolutions or terminations.

A resolving ‘win’ or ‘loss’ can be described as an epiphanic closure. It is a videogame state in which an unresolved aporetic (Greek *aporia*, ‘non-passage’) situation (ludic or story-related) is resolved. A terminating ‘win’ or ‘loss’ can be described as an abortive closure. It is a videogame state in which videogame play discontinues, with or without resolution. One videogame artifact may and often does provide multiple resolving and terminating closures. I move on with brief outlines.

† In *Tetris* the vanishing of successfully assembled tetrominos is one of the few ‘winning’ resolutions. A videogame like *Blade Runner* (Westwood 1997) offers a broader variety of ‘winning’ resolutions that differ from completed puzzles and time-critical situations to story culminations. Since a failure to overcome an obstruction or an unhappy story event may resolve a situation without terminating it, players may find resolutions also in their ‘losing’ *Tetris* moves and in the sad outcomes of their *Blade Runner* plot choices (cf. Juul 2013). As workable means for distinguishing ‘winning’ resolutions from ‘losing’ ones are not within reach, I choose not to make an analytic distinction between the two.

‡ A termination in *Tetris* is a videogame state in which the assembled tetrominos pile up into a ‘game over’ that temporarily aborts the videogame’s aporetic offerings. Whereas *Blade Runner*, too, provides a selection of ‘game over’ terminations, it is also programmed with thirteen ‘winning’ terminations that are marked by an appearance of the production credits. Because such distinctive marks differ by case, and in some cases the mark might be missing completely (see Montfort 2007), I choose not to make an analytic difference between ‘winning’ and ‘losing’ terminations.

Two intricacies complicate the resolution-termination distinction. The foremost of those is the notion of ‘discontinuity,’ which needs an analytical reading. *Grand Theft Auto: Vice City* (Fig. 1) suffices as an example. Now, if the player of *Vice City* does not manage to fulfill the demands set by a mission, she or he will be shown a ‘mission failed’ screen that is followed by a new videogame state: the avatar (usually) wakes up in a hospital with reduced savings. This instance does not ‘discontinue’ videogame play because something has changed: the player is provided a retry from an altered videogame state. Generally speaking, terminations are followed by old videogame states whereas resolutions are followed by new videogame states. A ‘game over’ in *Tetris* is a termination (ending or not ending play), a ‘mission failed’ in *Vice City* a resolution (ending or not ending play).¹⁰

The other intricacy, next to the bafflements of discontinuity, which makes distinguishing resolutions from terminations tricky in videogames, is storable content. To elucidate this difficulty I invoke Noel Carroll’s (2007) concept of ‘narrative closure’ as the “phenomenological feeling of finality that is generated when all the questions saliently posed by the narrative are answered” (1). This subjective feeling has nothing to do with terminating videogame states. While such ‘narrative closure’ might occur in *Vice City* once the player has overcome the main missions and seen the last cutscenes of the scripted ‘storyline,’ the player is subsequently thrown back to continue her or his aporetic exploits.¹¹



Figure 1. *Grand Theft Auto: Vice City* (Rockstar 2002). An unhappy resolution for someone who did not reveal her or his name when posting this image to the internet.

In summary, what ‘winning’ and ‘losing’ stand for in videogame play is actually the emotional response (spectrum) that players connect to different resolving and terminating videogame states. I call these similes, which may occur under any conditions, *subjective*

¹⁰ If the *Vice City* player runs out of savings, her or his failed missions might turn into terminations because of the loop that always returns the videogame state to an earlier one. Other ways of terminating *Vice City* I can come up with are to load a previous videogame state and to unplug the console.

¹¹ It would be possible to paraphrase Carroll’s concept into a *ludic closure*: the feeling of finality that is generated when all the aporia of the videogame are exhausted. This concept would of course be a phenomenological one. A technical application of the concept (a videogame state at which all possible states of the artifact have been visited) would be possible too, albeit with little practical use.

wins and losses, contra those *factual* wins and losses that occur under players' mutual agreements to rules (tacit or formal). While factual wins and losses are the basic components of non-videogame games, in single-player videogame play they are absent.

When it comes to multiplayer videogame play, factual winning and losing do occur. These cases entail reasoning players to enter mutually agreed contest(s), which means adding an extra layer of constitutive rules to their videogame play (cf. Feis & Sconfienza 2012b). Competitive multiplayer videogames occasionally support such agreements (tacit or formal): challenging a fellow player to a duel in *World of Warcraft* asks for a confirming input from both players, whereas building a city in *Clash of Clans* (Supercell 2012) brings along the immediate contingency to attack and to be attacked by a rival player. Regardless, recognizing factual winners and losers in the course of multiplayer videogame play is seldom straightforward.

As I was once co-playing the shooter *Far Cry 3* (Ubisoft, 2012) with a friend in a non-competitive splitscreen mode, the videogame artifact suddenly announced that I had won over my friend due to my higher number of 'kills'—despite the fact that neither of us was competing. I certainly did not consider myself a winner (not even a subjective one), for our shared tactic involved me taking on the larger group of enemies whilst he was fetching pizza from the oven (Fig. 2). Likewise, for those few times when I was victorious in my attacks on other players' cities in *Clash of Clans*, I cannot know for sure whether I had factually won because some of the cities are abandoned by their players, thereby being mere automated piles of pixels with no contest-attending opponent to defend them (like my own currently is).



Figure 2. *Far Cry 3*. The videogame artifact announces Matijad as a winner over Wiktoria. I have no idea whether Matijad really won (he appears to speak some Slavic language that I do not understand). I captured this screenshot from MrMatijad's video stream. With better video quality he would probably have more subscribers.

It appears, furthermore, that for those few times that factual winning and losing do occur in the course of (multiplayer) videogame play, they do not occur *in* videogame play—the mode of play specific to videogame artifacts that Leino determined by the gameplay condition. These are not cases of winning and losing in the videogame, but in an extra-videogame game, an *overgame*, which has at least one mutually agreed, extra-videogame rule coined by its players: ‘the superior videogame player wins.’ In sympathy with Ivan Mosca (2013), videogame play deals with rules only “in particular social contexts” (26), and if these social contexts construct overgames, the function of the videogame artifact in them is only that of a game component or environment the events of which are externally judged by its players. I borrow an example from Bogost & Nick Montfort (2009):

Even though the persistence in *Asteroids* is limited to a set of three-digit codes, the high score list transformed the game from a solitary challenge—man against rock—to a social challenge—player versus player. The space combat gameplay itself became a medium for social combat in the arcade. (86)

To be precise, while the high score list certainly must have encouraged people to commence player-versus-player overgames, beating the record of a three-digit code became a win in the factual sense only when an agreement existed between both players, the beater and the beaten. And when *Far Cry 3* announced me as a winner, no factual winning occurred because no overgame was ongoing.

Since non-videogame games like football and *Monopoly* (Parker Brothers 1933) lack the ludomic artifactual autonomy that enables agreement-less videogame play, it can be said that there is no one football or *Monopoly* (object) that people play but instead that each game of football and *Monopoly* is a socially agreed game (object) to which artifacts like balls and dice constitute the playground. One cannot play football or *Monopoly* without conceptual agreements. This concerns also the overgame in which I challenge my friend to a duel in the *World of Warcraft* universe: here the videogame artifact constitutes only the environment for a conceptual game (object) that extends beyond the videogame artifact itself. This does not, however, concern my solitary playing of *World of Warcraft* to the extent that it happens without mutual agreements of contest with other players: here the videogame artifact is the only game in town. Mutually agreed rules are the necessary building blocks that make non-videogame games exist, whereas the videogame, as an autonomous ludic artifact, can be played without agreeing to any rules at all.

I have argued that factual winning and losing do not occur in videogame play, and if subjective winning and losing (as emotional responses to resolving and terminating videogame states) are mere similes, my argument can be read as refuting all winning and losing in videogame play. What I cannot refute, however, is that videogames do amuse their players as they succeed and fail, for which I do not wish to take game status from the videogame in total (not on this occasion at least). The identity of the videogame as a game is not dependent on at what points the player gains her or his ludic successes (subjective wins) and failures (subjective losses), but on the videogame’s artifactual capacity to act as an undeniable judge who resolves and terminates.

In football the players' performance on the field is evaluated by human referees; in *Monopoly* the evaluation is executed by the players themselves. Every such evaluation is conceptual in the sense that it could be otherwise if the evaluator would so insist. In videogame play, however, these evaluative processes are executed by an 'ultimate referee' (Taylor 2012, 49), the multitasking artifact itself, whose evaluations are definite to the most extreme degree: negotiation is never an option. This ludomic artifactuality enables play that is not subject to any mutually agreed rules.

From this perspective the closest cultural phenomena to the videogame are evidently those ludic artifacts like pinball and payazzo machines—Simondon (2009, 6) would probably call these 'pre-individuated' videogames—that appear to evaluate player performance also in their non-electronic, mechanical forms. Although I do not wish to declare 'electricity' let alone 'digitality' as videogame-defining factors (some mechanical artifacts certainly fall closer to the videogame phenomenon than some of the things people call 'electronic games' and 'digital games') it does seem that the dearth of computational complexity in mechanical ludic artifacts tends to invite the individual less to 'play' and more to 'play with'—or to 'solve,' as David Sudnow (1983) suggests in his classic study of the algorithmically modest, self-repeating *Breakout* (Atari 1976):

I was in effect told that it's not a game at all. ... All worked out, programmed, set up in detail to function in a certain fashion. And that's not an opponent, nor a game, not by any stretch of the imagination. ... *Breakout* was a grid, an object with known fixed properties, no more an opponent than my piano or a layout of city streets or a hopscotch pattern on the sidewalk. (103–104)

I leave Sudnow's suggestion to be developed into a separate theory in the next subsection. Meanwhile, when I feel success after getting a high score in *Breakout* or *Tetris*, it is the undeniable judgment of the *Breakout* or *Tetris* artifact from which I derive my subjective win. When I feel failure as my avatar Tommy is hospitalized in *Vice City*, it is the undeniable judgment of the *Vice City* artifact from which I derive my subjective loss. And when I have a duel with a friend in *World of Warcraft*, it is the undeniable judgment of the *World of Warcraft* artifact from which I derive my subjective win or loss; while my factual win or loss still depends on whether we had and respected a mutual agreement.

In videogames the subjective conditions of winning and losing are pre-installed as undeniable closures that resolve and terminate its play. Resolving subjective wins and losses are closures that decide situations; terminating subjective wins and losses are closures that abort situations. While the videogame artifact may and often does provide plentiful resolving and terminating closures for its players, it can additionally (and simultaneously) function as a medium for the players' mutually agreed overgames in which factual winning and losing take place as well.

Regardless of the points at which videogame players experience their subjective wins and losses, it is the videogame artifact that evaluates the source: the player performance. And regardless of the points at which players experience their factual wins and losses, it is still the videogame artifact's evaluation of player performance on which those mutually agreed overgame states are based. As a game, this artifactual *performance evaluation* of the player is the identifying ludom aspect of the videogame.¹²

¹² With this remark I wish to preclude those criticisms that insist, in the spirit of Kendall Walton (1990), that even “each individual spectator of a movie [constructs] his own private game” (232); thus leaving the videogame artifact's ‘performance evaluation’ to be nothing but the player's interpretation of virtual facts (more about ‘virtual’ later). I concede my lapse to a personification of a non-person artifact, for which I nonetheless claim to have good reasons. Since in videogame play the set of virtual facts are also the *only* facts that can be interpreted as evaluations (unlike in non-videogame games), it seems reasonable to think of the videogame artifact as an ‘evaluator,’ with the given reservations.

- ... One of the established figures in simulation-related game and videogame research, Jon Klabbers, holds a rather opposite view on games from the above-cited Walton. For Klabbers (1996), by definition, “games too are social systems: collective structures shaped and maintained through individuals and their interrelationships” (84). As you can guess by now, I consider Klabbers to be on the right track notwithstanding my metaphorical approval of single-player videogames (with mere algorithmic playmates) as games too. What made me dedicate a full footnote to this researcher is his exceptionally fascinating ludo-ontological application of Michael Lewis' level-theory of the animal mind. The level theory goes like this: on the first level ‘I know’ (basic level also common to animals), on the second level ‘I know I know’ (the capacity to reflect on one's self and to reflect on what one knows), on the third level ‘I know you know’ (I expect others know as well). And here's Klabbers' (2009) punch line: “Playful gaming only starts at level three” (6). I take a step back and add that playful *videogaming* starts already at level two.
- ... Miguel Sicart (2009) argues: “the act of playing is evaluated and understood via the culture, values, and traditions of the player outside the game, because that is the way in which we acknowledge the [game's] specific ontological being separated from and distinct to other types of experiences” (87). I read that Sicart speaks here for videogames as well. As it has become clear, while I do not claim that videogame play cannot be evaluated extra-artificially, I find such evaluations unconvincing for acknowledging the videogame's ‘specific ontological being’ (and the game's for that matter). Moreover, and as the upcoming subchapters manifestly express, I strongly disagree with the notion of game and videogame play as a ‘separate and distinct experience’ to other types of experiences; which again does not mean that the videogame's formal properties (that provide for those experiences) could not be distinguished from the general cultural context (as I do in Article 4).
- ... If the videogame is treated merely as the environment for overgames that extend beyond the videogame artifact itself, it could, in fact, be considered a channeling ‘medium’ even in the strict senses of communication and transmission (recall Bogost & Montfort 2009, 86). To offer a fine case in point, Tony Manninen (2003) talks about the ‘clan wars’ of online videogames as constructs that exceed the ‘win-factors’ of the artifact through which they take place. Emma Witkowski (2012), in turn, has captured an extremely fascinating *World of Warcraft* incident (154–169) that pretty much confirms the mediating role of the videogame artifact in the social contexts of eSports.
- ... I could not agree more with David Myers (2009): “it seems reasonable to construct an explanation of social video game play as an extension of individual video game play rather than to characterize individual play as a fragmentary and incomplete version of social play” (56).
- ... The way in which I have used (and keep on using) the concept of ‘artificiality’ in this dissertation has one unfortunate exception (in Article 4) that makes the terminological coherence of the present project less than perfect. Nothing is so imprudent as over-prudence.

1.2. A Ludic Theory of Videogames

More about this theory in Article 2, “Puzzle is not a Game! Basic Structures of Challenge” (2013), and Article 3, “Hermeneutics and Ludocriticism” (2015).

In the previous subchapter I posited the videogame in the context of other things people tend to call ‘games.’ I found that the videogame’s phenomenal structure differs from those of other game-things primarily by its artifactuality that evaluates the player’s performance. The closing paragraphs made a brief note on how some mechanical artifacts correspond with (or at least come close to) this evaluating behavior, for which you might still want to criticize the conclusion by pointing out that several non-videogame game artifacts evaluate their players’ performance in the same way, such as *Labyrinth* (Brio 1946) pictured in Figure 3.

In the following pages I answer the above criticism by studying the videogame in the general context of artifactual ludic phenomena, *ludic artifacts*. Instead of executing a comprehensive conceptual scrutiny that would delve into the mass of diverse ludic artifacts such as toys (Salen & Zimmerman 2003; Wardrip-Fruin 2005) and playable art (Mitchell & Clarke 2003; Leino 2012a), the focus shall be on one particular liaison, both parties of which can unquestionably be said to evaluate their players. This liaison is the one between the videogame artifact and the puzzle artifact.

The study of this subchapter will be an analytical one. It will constitute the structural foundation of a self-proclaimed theory of games, which is here applied to the videogame. The theory is grounded on a metaphorical interpretation of ‘game’ in the Gothic language (*gamen*, ‘partner,’ ‘fellowship’). By metaphorical interpretation I mean to theorize games not only as systems with multiple fellow players but as systems that may also consist of multiple player-like components. Hence, while not being utterly limited to multiplayer games, the theory evades all-inclusiveness by denying game status to numerous amusing single-player artifacts like puzzles and hypertext novels whose etymology and demand structure are closer to other cultural traditions. This returns me to the criticism concerning the gameness of *Labyrinth*: according to the theory at hand, it is a (kinesthetic) puzzle artifact, not a game.



Figure 3. *Labyrinth*. From Brio catalogue.

Before elaborating on my theory that does not recognize puzzles as games, it would be fair to take a look at the former’s etymology. Unfortunately, this time scholars have had a hard time finding unifying roots for the word’s origins that “in the absence of any evidence ... must remain no more than speculation” (OED Etymology, *puzzle*, v.). Still, as Gianni Sarcone’s independent research suggests, the distinctive nature of this young word most likely derives from Latin *sinere* or *posinere* (‘to place,’ ‘settle down’), which

implies the puzzle to be more like a stable ‘situation’ or a ‘position’ than a processual game (Fig. 4). And indeed, since the 17th century the use of the word does coalesce into a ‘perplexing question’ or a ‘difficult problem’—for which reason Sarcone and other puzzle professionals have recently been inclined to identify the phenomenon rather after the Middle French *matagraboliser* (‘to puzzle,’ ‘mystify’), and its study as ‘metagrobology.’

In academic circles perhaps a more familiar term for the study of puzzles is the somewhat self-explanatory *enigmatology*. While the enigmatic form and the art of its creation, ‘enigmatography,’ were already a recognized part of classical Greek culture (Bryant 1983), their recognition as a subject of scientific study goes back to another puzzle professional, Will Shortz, whose research on the evolution of American word puzzles (1974a; 1974b; 1975a; 1975b) eventually earned him a degree in enigmatology.

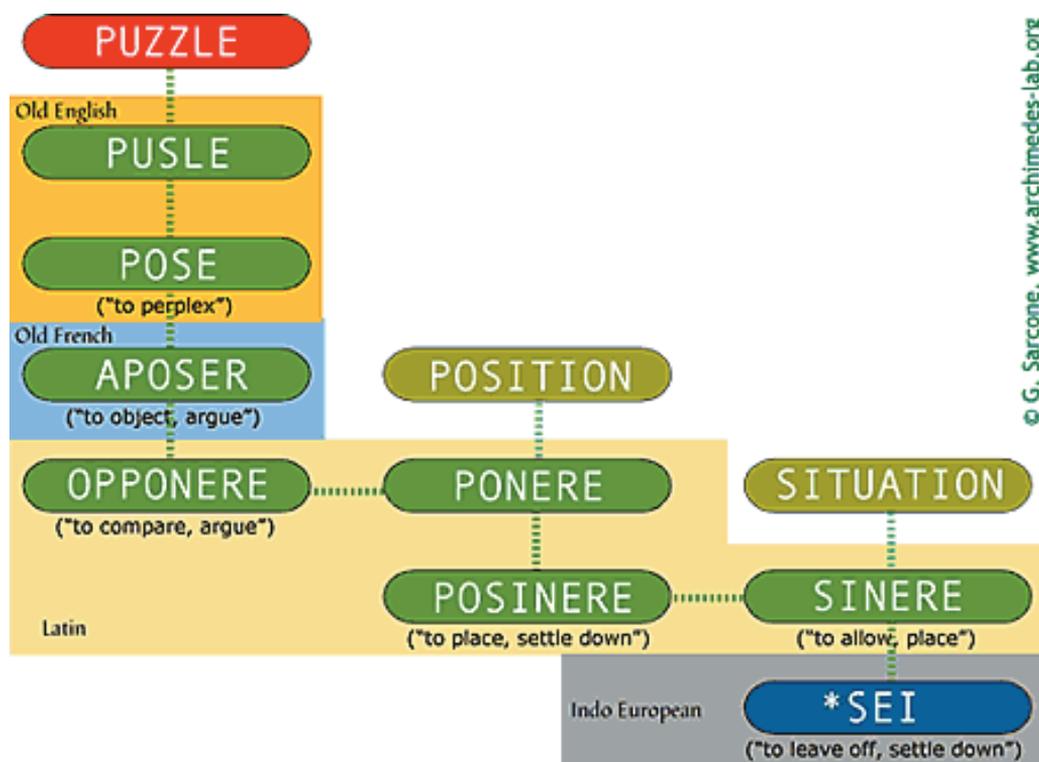


Figure 4. Etymology of the word 'puzzle' by Gianni Sarcone.

Despite the above, the disciplined study of games and videogames can be said to have successfully colonized the territory of puzzles in the name of game research. As a result, whereas scholarly investigations into games and videogames are today legion, those of puzzles are barely existent. The presumable justification for this state of affairs is that since puzzles are studied as games, the study of games automatically contributes to the study of puzzles. The logic works, but the practice does not: although game autologies and typonologies provide concepts that can be used to explain some puzzle elements,

even the basics of analytical puzzle research are still lacking. This grave gap is a general ludo-ontological deficiency, for which the upcoming theoretical structuring of the puzzle becomes a nontrivial by-contribution.¹³

Fortunately I do not need to begin from a scratch. The ludo-theoretical founding of Chris Crawford (1984) is aged and undeveloped, but still one of a kind:

If the obstacles are passive or static, the challenge is a puzzle or athletic challenge. If they are active or dynamic, if they purposefully respond to the player, the challenge is a game. (13)

In fact, Crawford is not the only figure in the field of game and videogame research who refuses to discuss puzzles as games. Greg Costikyan (2002) has the same idea when he claims that if the artifact “isn’t interactive, it’s a puzzle, not a game” (11). Andrew Rollings & Dave Morris (2004) likewise state that

... puzzles are not gameplay in themselves. Puzzles are specific problems. Game design is about creating a system that will spawn generic problems. (37)

While Björk & Holopainen (2005) realize that puzzles “are a borderline case between games and game-like activities” (344), Scott Kim (2008) is careful to separate “puzzles from games and other play activities” (38). Ernest Adams (2010, 264) takes perhaps the most striking step by providing an almost analytical separation between puzzles as logic-based ‘mental challenges’ and challenges that require ‘strategic thinking.’

In addition to my own selection bias, there must be a good explanation for the fact that all the previous citations come from designers. Even the title of the historically renowned design magazine *Games & Puzzles* used to assume the difference obvious (see also ‘solitaire’ in Parlett 1999). The explanation lies in accepting that the game is not the only possible ludic activity or artifact. That might not be obvious from the outside (a jigsaw puzzle may not *look* much different from a *Tetris* screenshot) but deep down the system designs are completely dissimilar. And this is most visible for those to whom design is an actual practice.

Now, how is the structure of a game artifact different from that of a puzzle artifact? With reference to Crawford and everyday language, there seems to be a call for tagging the ‘demands’ that game and puzzle artifacts evaluate as ‘challenges.’ To maintain analytical coherence, I define the difference between the two as follows: *challenges* are always nontrivial (uncertain outcome), whereas *demands* can also be trivial (certain outcome). For instance, figuring out how to move chess pieces in *Chessmaster* (Ubisoft 1986) is a demand for everyone who wants to play, but very few players find it challenging. In other words, challenges are subjective; demands are objective. In the present context the given difference between demand and challenge is somewhat insignificant, for they

¹³ The earliest academic article in which I have found puzzles discussed as artifacts surveys an historical games exhibition; identifying the puzzle as a distinct ‘ingenious object’ and separating it from the ‘games of children’ that fill the rest of the sections at issue (Culin 1893, 205).

both need to be theorized as self-sufficient sub-structures that are fenced off from ludic artifacts. The following discussion will hold on to ‘demand,’ thereby hoping to avoid some uncalled-for subjective connotations.¹⁴

For the multiplicity of players or player-like components that in this theory are required for a ludic artifact to be a game, I will stick with Crawford and borrow the term *dynamics* from physical science. I could also have chosen ‘emergence’ (as Juul 2002), ‘randomness’ (as Björk & Holopainen 2005), ‘contingency’ (as Malaby 2007), or perhaps even ‘uncertainty’ (but not as Costikyan 2013); however, more significant than the choosing of the word is what the word stands for, and to explain that standing I might as well refer to the its first documented dictionary definition from the 18th century as the “motion of bodies that mutually act on one another” (OED, *dynamics*, n.). Because Physics is today commonly considered a science that pursues determinacy, I should clarify that in the present context dynamics operates in its early form as a force of indeterminate, varying motion that cannot be entirely predicted. The part ‘act on one another’ is critical as well, as I do not wish to include all visible motion that players perceive in my conception of dynamics. It might hence be more accurate to talk about *behavioral dynamics* (to stress their external relations), but I am sure you will get the idea without that specification.

If games are ludic phenomena with behaviorally dynamic components, it makes sense to define puzzles as ludic phenomena with behaviorally static components (cf. Feis & Sconfienza 2012a). Statics stands here as an obvious opposite for dynamics as “that which does not change or progress” (OED, *statics*, n.). So whereas static components may ‘move’ and ‘act on,’ they can do that only in a determinate, predictable manner so that their behavior is still ultimately fixed. It does not hurt to clarify here that while I continue to employ the words *determinacy* and *indeterminacy* for describing dynamic and static (ludo-artifactual) behaviors, those words can often be read as synonyms for ‘predictability’ and ‘unpredictability’ without major missteps. To give you a chance to fathom these and other above-described abstract accounts, canonized examples follow.

Every ludic artifact requires at least one dynamic component to be functional. I call this categorical locus the *player position*. Several actual players may fill one player position, and the same actual player may fill two or more player positions. As in Stefan Zweig’s celebrated short story *The Royal Game* (1941), the first case transpires when a group of amateurs challenges a chess master, and the latter when the chess master’s split personalities play against themselves. A single player position is nevertheless always a single dynamic component, no more and no less.

¹⁴ The relationship between ‘demand’ and ‘challenge’ is a torturous one. As you will soon see, some demands involve working with indeterminate and unpredictable components which fulfilling is, theoretically speaking, always uncertain to some degree. This suggests that some demands are always nontrivial, i.e. challenges. One solution to this paradox would be to discuss challenges as collections of demands. This, however, would require a separate distinction between trivial and nontrivial challenges; which would likewise be paradoxical as there should always be some uncertainty and nontriviality for a challenge to be a challenge. The definition I give in the main text was preferred for cohering better with the demand-based framework in use. See also Sara Iversen (2010; 2012).

Chessmaster is a videogame with multiple dynamic components: a game. All of its dynamic components are player positions. These player positions are dynamic because their moves are fairly indeterminate and unpredictable. This is true especially if both player positions are filled by human players. If a computer opponent fills the other position, the situation remains unchanged as far as the computer does not follow a determinate or predictable pattern.

Percipient critics (such as Wolf & Perron 2003) might point out that because computer opponents are preprogrammed they must always be determinate and predictable to some degree. This is probably true, as it might be that the human being is a determinate and predictable nervous system and that the entire cosmos is set. To respond to that constructive note I need to access Physics again and steal one more of its key distinctions, namely, that between ‘subjective randomness’ and ‘objective randomness’ (for a time-efficient overview see Zeilinger 2005). The former takes place whenever people cannot detect regularity in what is perceived, and the latter takes place when no available tools exist for detecting regularity in what is perceived. It seems very logical to adapt this distinction for the purposes of game and videogame research in the following way: if the (ludo-functional) regularities of a ludic artifact cannot be detected by its players within given means, the artifact in question should be considered indeterminate, unpredictable, and dynamic; and thus, a game. In the opposite case one would naturally be talking about determinacy, predictability, and statics; and thus, more often than not, of puzzles. A number of fascinating dilemmas do, however, result from the subjective ranges of determinability and predictability, some of which this dissertation discusses elsewhere (Article 2).

A wooden jigsaw puzzle is an example of a puzzle artifact in which a single player position is the only dynamic component: there is no opponent, and the pieces do not move or change their form in any indeterminate or unpredictable manner. Due to the static nature of the artifact, it is better to describe the agent who fills its player position not as a player but as a *solver*.

Both *Chessmaster* and the wooden jigsaw puzzle are ludic artifacts, yet in order to make more general use of the theory it is necessary to push artifactuality aside momentarily. As mentioned earlier, respective demands may be fenced off from ludic artifacts, and to do this I need to substitute the term ‘artifact’ temporarily with the more vague ‘system.’ Game artifacts thus become dynamic ludo-systems, and puzzle artifacts become static ludo-systems. Note that the videogame phenomenon can be considered to include both dynamic (game) systems and static (puzzle) systems. To be able to distinguish the respective demands from those systems, I term demands in which dynamic components are functional *strategic*, and demands in which only static components are functional *puzzles*. Both demand types may or may not require the agent of the player position to exert *kinesthetic* effort on top. The next subchapter discusses kinesthetic demands more closely.

I specifically used the word ‘functional’ to respect the fact that puzzles, when treated conceptually, can be bracketed from dynamic ludo-systems. In *Chessmaster*, for instance,

a videogame state that can be turned into a checkmate in one move can be conceived as a puzzle with a determinate solution. In reality the situation is of course more complex: if the player fails to checkmate, the dynamic opponent responds with a countermove and the game goes on. In this sense puzzles are best theorized as conceptual, immaterial demands the overcoming of which happens outside the empirical; in contrast to strategic demands that can never be given a stable conceptual form due to their open-endedness; that is, strategic demands exist only along with the player's recursive empirical input.

The evident counterargument against the immateriality of the puzzle is that some puzzles, like all strategic demands, require recursive empirical input to exist and to be solved: solving a jigsaw puzzle (either as an individual artifact or as a videogame sub-demand) can be seen as a process of recursive trial and error piece fitting. In this case the process of trial and error is only a technique, not a necessity of either solving or existence. Provided that the solver has gathered all the functional components of the jigsaw puzzle (perceived all pieces), there is at least a theoretical possibility to fit them and solve the puzzle without empirical input. This is true for all puzzles because their functional components are static; and, this is never true for strategic demands because their dynamic components continuously alter the ludic state, being indeterminate or unpredictable (Fig. 5).

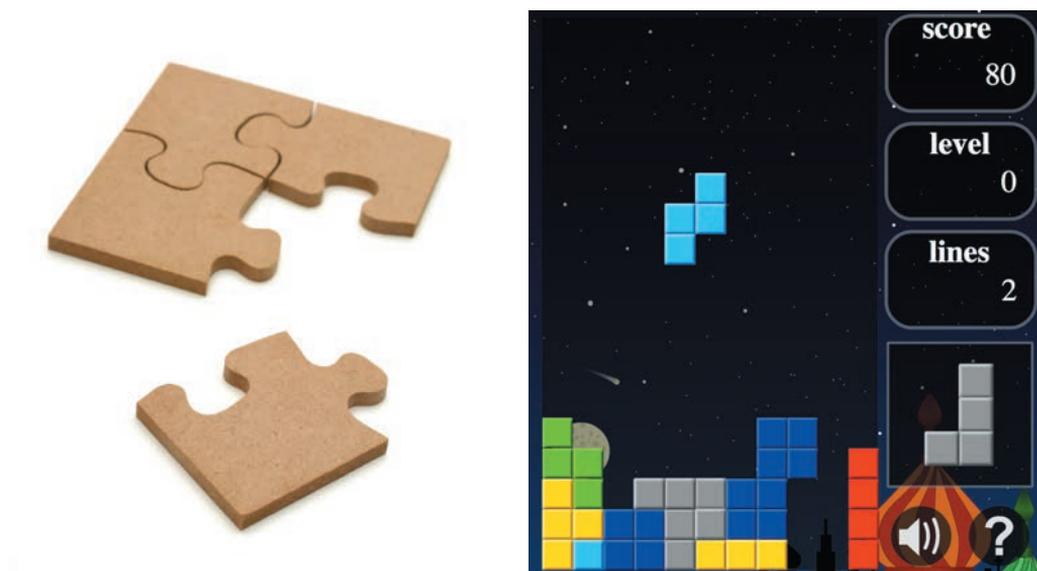


Figure 5. If you are able to gather all functional information concerning a puzzle demand, as you can do for the jigsaw on the left, you also have the means to solve it conceptually. As to strategic demands, contrarily, you can never solve them due to their dynamically behaving components: as in *Tetris* on the right, the random sequence of provided tetrominos requires you to react via input frequently. I did not do very well with the square tetromino.

Puzzles are 'texts' almost in the traditional literary sense of the word. This is because their static structure is made up of two parts, known to enigmatologists as the encoded 'image' and the decoded 'answer' (Kaivola-Bregenhøj 1996; cf. Burns 1976). The act

of puzzle solving can thus be considered a genuine hermeneutic act more or less: a circular process of solution seeking via scanning parts in terms of the whole and the whole in terms of its parts. In this service, perhaps for the first time in its history, the hermeneutic process is useful in its original sense: the text does indeed hide an unquestionable word of God. Hans-Georg Gadamer (1989) was right when he noted that play “is not tied to any goal that would bring it to an end” (104), but wrong when he cited the jigsaw puzzle as an example (106). It is worth repeating that people do not play puzzles, they solve them.¹⁵

The two defining features of the puzzle, immateriality and determinability, do seem to result in a paradox, however. If the puzzle is essentially immaterial, how can solvers be sure they have the right solution without receiving some sort of empirical confirmation? While there is no trouble in confirming whether a chess move results in a checkmate or not, how can one be sure that turning the handle will solve the closed-door puzzle in *Full Throttle* (LucasArts 1995) without actually trying it? What if kicking the door open is the correct solution instead? The reality is that one cannot, regardless of how obvious the answer may seem. In this sense the situation is not dissimilar to that of a riddlee who can never know if her or his answer is correct before the riddler’s confirmation (see Ben-Amos 1976; Pagis 1996). These so far uncontested premises are worth contesting.

My rival account is that the puzzle does not (need to) surface in its entirety at first appearance. This is best illustrated by a cartographical point of view. If puzzles are static unmapped ‘situations’ or ‘positions,’ as their Latin origins suggest, the initial ‘How to get the door open?’ situation in *Full Throttle* is only the first sight of the puzzle whose topography extends far beyond this starting point. Trying to open the door by kicking it is not so much an incorrect answer but a cartographic marking that enriches the solver’s map of the puzzle area: after the failed kick the puzzle has elaborated from ‘How to get the door open?’ to ‘How to get the door open without kicking it?’ The same hermeneutic process takes place as the riddlee of a text-based videogame tests her or his answers against the parser; or when a player of *Far Cry 3* encounters an unbridgeable shaft and learns that she or he must find another route to the radio tower. While gathering the pieces of a puzzle always needs active empirical perception to some degree, every puzzle, in a conceptual sense, is an unchanging static structure.

¹⁵ I am sure Roland Barthes (1977) would agree with me here—and add that people do not ‘read’ puzzles either for “the space of writing is to be ranged over, not pierced” (147). I would not have hesitated to agree with Barthes if he had told me that puzzles are to be ‘pierced’ and games ‘ranged over’ (but since he surely would not have been ready to separate games from literature in the first instance, this hypothetical anecdote might be a bit numb).

... The word ‘solve’ might be more problematic than I think it is. Aarseth (2011), for instance, describes *Tetris* as a videogame that is “perfectly solvable” (66). Since all versions of *Tetris* that I have played provide tetrominos randomly, I cannot see how such videogames could be solved (save in the sense that everything can be solved).

It is not uncommon to find puzzles in contexts that complicate this theorization, not least of all in videogames. One such context is the time-critical framework that gives the solver a limited time to unearth the answer, meaning that although the puzzle is static the solver may not be able to map out the necessary pieces of information to find its solution even in theory. The same complication occurs in the ageless case of Bilbo Baggins, who gives his riddle only a limited number of attempts so that the riddle cannot be explored to the full. With such limitations puzzles cease to be mere puzzles, as they become ‘gamified’ along with new dynamic components: if the solver’s exploration of the puzzle turns out to be temporally or otherwise limited, she or he may not be able to gather the required information for the solution.

The alternative demand for the static puzzle is thus the strategic demand in which the player must deal with indeterminacy and unpredictability: dynamics. By rule, such demands do not work according to right and wrong moves but rather are approached through less or more efficient strategies.¹⁶

Strategic demands also set different interpretive requirements for the agent filling the player position: she or he can no longer rely on classic textual hermeneutics. Because (some of) the strategic demand’s functional components are indeterminate, unpredictable, or contingent (i.e. subject to alteration) it is better not to interpret them as texts. Here I lean on Wolfgang Iser (2003):

If something nontextual, open-ended, or beyond the reach of one’s own stance has to be made manageable, the hermeneutic circle may no longer be adequate. Translating open-endedness into graspability, or entropy into control, is different from translating a text into understanding, or from turning understanding into its application, or from deciphering what its disguises may either hide or reveal. Recursive looping therefore becomes a procedural necessity when it comes to charting open-endedness or controlling entropy; it operates as an input/output interchange or as systemic recursion that allows us to account for the self-maintenance of autonomous systems (8)

To discontinue the broad and often confusing traditions of ‘philosophical hermeneutics’ in the name of which the text metaphor has been extended from societies to psychoanalytic beings (see Foucault 1990), Iser consults the field of cybernetics to suggest *cybernetic interpretation* as the method for dealing with nontextual, dynamic objects. He describes this process as recursive looping through which interpreters aim not at ‘understanding’ but rather at ‘grasping’ or ‘controlling’ the interpreted: because the interpreted is dynamic by nature, it lacks the whole and hence ‘understanding’ it can never be anything but a fleeting grasp.

¹⁶ In their seminal work on discourse comprehension strategies, Teun van Dijk & Walter Kintsch (1983) define ‘strategy’ as “the idea of an agent about the best way to act in order to reach a goal” (64–65). While they add that a “good strategy is something that works most of the time,” (67) I can continue that a perfect strategy that works all the time is no longer a strategy but a solution.

By evoking Norbert Wiener's (1950) original idea of the cybernetic practice as an art of operating feedback, "being able to adjust future conduct by past performance" (33), I risk abusing Iser's model with my limited interpretive faculties and so locate the functional difference between the two methods in temporality: hermeneutic interpretations are retrospective, cybernetic interpretations are prospective.

Remarkably, the objective of the latter diverges radically from the interpretive dogma of uncovering kernels of 'meaning.' It is no longer the whole that matters, but rather the parts and their behavioral alterations. To paraphrase, instead of observing the relations between parts and *the* whole (as in an hermeneutic circle), cybernetic interpreters conceive of *parts* as transient wholes. In so doing, they settle with an infinite renewal of loops that target momentary spatiotemporal behaviors, respectively and prospectively. This renewal, as Iser (2003) presses, is rarely interpretive alone, but usually operates together with empirical input:

Recursive looping develops as an interchange between input and output, in the course of which a prediction, anticipation, or even projection is corrected insofar as it has failed to square with what it has targeted. Consequently, there is—at least potentially—a dual correction: the forward feed returns as an altered feedback loop that in turn feeds into a revised input. (85)

In ludic terms, if the players of *Chessmaster* wish to control their dynamic opponent by means of cybernetic interpretation, they must keep on refining their empirical inputs in order to adjust the control-contributing data. While empirical input may be needed to access the data of puzzles too, in those processes the discovered data are more like hermeneutic enhancements than adjustments for they contribute to the solver's conception of the interpreted as a stable whole. Therefore, 'control-contributing' has a special position here in place of the hermeneutic 'understanding-generating.' There is no way the player can ever sensibly pursue, let alone reach, an 'understanding' of the opponent if she, he, or it is truly dynamic—as her, his, or its manners of behavior have the potential to change in the next match or even in the next move.

The cybernetic interpretation process becomes even more evident in videogames whose strategic demands require handling multiple dynamic components at once. The shooter videogame is a fine example in which encounters with opponents (if you wish to study encounters as distinct demands) are always more or less unique situations that entail recursive looping. While in single-player shooters like *Wolfenstein 3D* (id 1992) the opponents may end up behaving in parallel ways due to algorithmic simplicity, in multiplayer shooters like *Counter-Strike* (Valve 1999) human players ensure that previous loops are less resourceful in their grasping.

Although cybernetics (as an interpretation of aperture) can be contrasted with hermeneutics (as an interpretation of closure), there is no need for absolute dichotomies. First, every interpretation of a videogame artifact contributes to the player's knowledge base of the videogame artifact in question. In this sense, all cybernetic loops are linked

to the player's meta-ludic hermeneutic circle of the videogame artifact to some degree; meaning that every encounter in *Wolfenstein 3D* eventually becomes part of the player's hermeneutically constructed conception of the videogame artifact as a whole. Second, since the application of the hermeneutic and cybernetic modes of interpretation depend on whether the interpreted behaves statically or dynamically, and because the interpreter cannot always know which behavioral model the interpreted follows, it is unavoidable that sometimes players and solvers employ 'incorrect' interpretive tools (that may be switched during performance nonetheless).

The theoretical distinction between the game artifact and the puzzle artifact can thus be summarized as follows. A game artifact is a ludo-system that includes functional dynamic components; where 'dynamic' refers to indeterminate varying motion that cannot be entirely predicted. A puzzle artifact is a ludo-system in which the functional components are static; where 'static' refers to determinacy and predictability ergo the system's behavior is ultimately fixed. Game artifacts are thus capable of maintaining both strategic demands (dealing with dynamics via cybernetics) and puzzle demands (dealing with statics via hermeneutics), while puzzle artifacts can maintain only the latter.

As far as being a game is considered constitutive for the videogame, the identity of the videogame as a ludic artifact is defined by *dynamics* that provoke its players to overcome strategic demands by means of cybernetic interpretation.¹⁷

¹⁷ The distinction between hermeneutic and cybernetic interpretation is an attempt to describe the phenomenological difference between puzzle solving and strategic engagement. In an early article of this dissertation (Article 2) there is a strong claim that for a structural theory (such as the present one) this extension is of supplemental use alone. While I still agree with my old self, I must admit that his choice of words ("an unfruitful approach") could have been lighter.

... Elsewhere in this dissertation (Article 3) I employ the expression *ludic interpretation* to cover both hermeneutic and cybernetic interpretations that aim at comprehending videogame components in terms of ludic success. I see no trouble in referring to the mutual goal of these interpretive modes commonly as *ludic understandings* as long as the term is used with an awareness that cybernetic interpretations can never reach *an* understanding in the final sense (a claim that modern hermeneutists apply to hermeneutic interpretation too, but which is sterile within ludic theory because static ludo-structures do contain 'final understandings').

... Note also how in another place (Article 4) I use the phrase 'videogame hermeneutic' for the player's overall orchestration of her or his ludic interpretations. Since this 'hermeneutically generated understanding' of the videogame artifact may also involve cybernetic interpretations, a more exact term for it would likely be the *omni-ludic* (Lat. *omnis*, 'all') or *omni-ludomic* interpretation. It is important to read the section in question with an eye regulated for the publication's original rhetoric: there I take part in a specific aesthetic conversation in which the terms 'hermeneutic' and 'meaning' carry explicit histories.

... My theory of games seems to be in concert with Aarseth's (2004) claim that "novels are games only in a metaphorical sense; they tease us, but we are not real players ... To equalize these metaphorical games with a real game is to marginalize an already (academically) marginal phenomenon" (53). On the other hand, Aarseth (2014) has recently insisted that trying to develop the concept of game "into a theoretical term would probably do more harm than good, were it to succeed" (484). One or the other, my theory appears to be a safe bet: if it fails, no harm is done.

1.3. A Story Theory of Videogames

More about this theory in Article 4, “A Kinesthetic Theory of Videogames: Time-critical Challenge and Aporetic Rhematic” (2013), and Article 5, “An Ontological Theory of Narrative Works: Storygame as Postclassical Literature” (2015).

At an early stage of this project I was privileged to be invited to the IT University of Copenhagen as a visiting student. As a result of the extreme paucity of local accommodation, another privileged invitation soon followed as videogame scholars Rilla and Pippin offered to house me for the first days until I found my own place. During those memorable days we had the habit of watching miniseries in the evenings; a habit my hosts had after their working hours. So there we were, videogame people not playing videogames but watching miniseries! As I one day happened to mention the irony, Rilla gave me a reasonable reply: she and Pippin shared a tradition of late evening dinners, and you cannot play videogames and have dinner at the same time. How right she was.

This subchapter will continue from where the previous one left off by introducing a second ‘game’ aspect that can be used to identify the videogame in a specific context. The gameness of this dinner-inhibiting aspect is, again, more metaphorical than concrete. The etymological support piece is this time the German game-root *gumpfen* (‘jump’), which has nowadays come to represent different types of vigorous or irregular movement. Here a literal interpretation of ‘game’ would thus be, roughly speaking, a ludic artifact (or activity) that entails movement in the very physical sense. Apparently the Germans of the time did not game chess or other non-physically amusing strategic activities.

When it comes to seeking this physically active gameness from the videogame, it would sound rather contrived to talk about genuine vigorous movement. The videogame player is hardly a jumper. With some metaphorical imagination, however, it is possible to force the videogame into the ‘vigorously moving’ conception of games. By this I refer not solely to the movements of the player, but also to that which the player moves. As in shooting sports, kite flying, and RC steering, the movement generated by the videogame player is twofold. Rephrasing Andrew Darley (2000), I call this displaced activity *vicarious kinesthetics*. The below discussion will depart from that metaphorical gameness to identify the videogame in relation to artifactual story phenomena, *story artifacts*.¹⁸

I commence the investigation by recapitulating the distinctions of the previously introduced theories. The videogame artifact evaluates its players as they address themselves to either puzzles or strategic demands. While puzzles require the solver to deal with static components and employ hermeneutic interpretation, strategic demands require the player to deal with dynamic components and employ cybernetic interpretation. I will now supply the missing link between the two: the *kinesthetic demand*. Because the below theory applies not only to the videogame but to other ludic artifacts too, I intentionally

¹⁸ By describing videogame play as a ‘displaced activity’ I mean that the ‘place’ of the activity becomes disputable. See Henrik Nielsen (2010) and compare it to Andreas Gregersen’s (2011) ‘situations.’

omit the prefix ‘vicarious’ (that comes with an input device) and simply speak of the ‘kinesthetic.’

Unlike puzzles and strategic demands, which are both defined by the manner in which their functional components behave, the kinesthetic demand may surface equally in dynamic and static environments. What defines the kinesthetic demand is not componential behavior, but the requirement that most ludic artifacts set for their empirical exploration: input. For a demand to be kinesthetic, all it needs to ask is extranoematic input. To avoid misunderstandings in later sections: it is not that input would be defined by kinesthetic performance, but rather that kinesthetic performance is defined by input. Discussing this input as a ‘psychomotoric’ task (as in Article 4) would not be entirely criminal, yet because kinesthetic performance may be executed also via oral and brainwave devices (see Nijholt et al 2009) let me just use *input* here.

Like puzzles and strategic demands, kinesthetic demands also need to be fenced from the ludic artifact to be analyzed. For instance, moving a tetromino to a specific spot in *Tetris* can be analyzed as a single kinesthetic demand; keeping the *Tetris* board clean can be analyzed as a larger-scale kinesthetic demand that covers the ludic artifact as a whole. As both examples attest, the kinesthetic demand can rarely, if ever, be analyzed in isolation from puzzle and strategic demands. In most cases, then, kinesthetic demands can be seen as the input condition that in one way or another enables and accompanies the rest of the demands that ludic artifacts evaluate (cf. Linderoth 2013a).

Because all strategic demands that ludic artifacts evaluate require recursive input to be overcome, they must also be kinesthetic to some extent. Whether this kinesthesia becomes a challenge depends on the demand and the player in question; nonetheless, for explicatory purposes I generalize: in *Tetris* input becomes a challenge, in *Civilization* it does not. The same applies to puzzles: the input required to explore the landscape labyrinths of *Far Cry 3* becomes a challenge sooner or later; the point-and-click input in *The Secret of Monkey Island* (LucasArts 1990) seldom does.

Before entering artifactual analysis, it is worth making a brief comment on *why* input becomes challenging in *Tetris* and *Far Cry 3*, but not in *Civilization* and *Monkey Island*. The simple answer is that in the former two (punctual) timing is a functional factor in input, and in the latter two it is not. While in all videogames input can be considered *chronocritical* (some input sequences are correct or more successful than others), in *Tetris* the steered tetrominos are in constant movement so that timing becomes another functional component in its input. In *Far Cry 3* the avatar is not in constant movement, but to make him jump successfully one still needs to press the jump button at the right place and at the right time while in motion. Contrastingly, in both *Civilization* and *Monkey Island* inputs function within spatial limitations only.

I shall call those kinesthetic efforts in which timing is a functional factor *time-critical*. It would be possible to theorize time-criticality further by analyzing the varying structural elements that make inputs time-critical, but since those theorizations are initiated

elsewhere in this dissertation (Article 4) I see no benefit in addressing that somewhat time-consuming topic here as well.

With the rudimentary tools of artifactuality, dynamics, statics, and kinesthetics that I have now gathered together, I should be properly equipped to identify the videogame as a specific story artifact. Terminological considerations are once more necessary. By ‘story artifact’ I refer loosely to any manmade object with prominent story components. As of now, I call those videogame artifacts with prominent story components *storygames*, or more precisely, *storygame artifacts*. Presently it is enough to acknowledge that any component of an artifact might be *storable* in the sense that it may become a particle in your or my storyworld (‘empirical’ or ‘conceptual’), and that there are story artifacts whose components tend to become such particles very often. Note how this *storiological* approach differs critically from most narratological approaches.¹⁹

Predictably, my idea is to juxtapose the demands of storygame artifacts with the demands of other story artifacts. Initially, a critical remark needs to be made: not all story artifacts evaluate performance as videogame artifacts do. The majority of novels and films, for instance, never provide feedback that could be considered evaluative judging. When it comes to the contrasting between the demands of storygame artifacts and other story artifacts, I must therefore reconceptualize the setting in which demands are discussed. Because all story artifacts need to be ‘progressed’ some way if their story components are to be exposed, let the demands that resist such progression be discussed as *progression demands*.

Since the present subject is not the ‘narrative work’ or ‘storywork,’ which I cognize as storable phenomena with both empirical and conceptual domains, but the ‘story artifact,’ which I cognize solely in empirical terms, the progression demands that I am currently interested in hinder material progression alone. To be clear, the interest is now on those demands that you must fulfill in order to explore the materiality of the story artifact; the storable data that story artifacts conceal within their pages, moving pictures, audio files, virtual worlds, *et cetera*. I proceed with examples.

¹⁹ A word on ‘storiology.’ After all, it was John Campbell (1860, ii), a renowned Scottish folklorist, who originally coined the word ‘storyology’ as the science of collecting and tracing the origins of folktales (cf. Crane 1911). It appears, however, that the label ‘storyology’ or ‘storiology’ never really settled as the mark for any sub-folklorist discipline. I base this on my own ineffectual hunt for contemporary storiologists and storiological research; for instance, since the 1930s the number of academic articles that even mention the word ‘storiology’ or ‘storyology’ in the archives of JSTOR (accessible to the scholars of the University of Turku) is exactly five (which are Hand 1965; Michaelis-Jena 1971; Blacker 1983; Thompson 1990; and Rée 1990). In the latest, by Jonathan Rée, the term is defined like this: “I am here distinguishing stories or plots (sequences of events) from the forms in which they are represented, the principal such forms being narrative and drama. Storiology, narratology, and what one might call dramatology are the corresponding bodies of theory” (1056). Following the above, I thereby appropriate *storiology* to signify the study of story artifacts and their theoretical dimensions in general scholarly sector that is presently attached to narratology for insufficient reasons.

Elsewhere in this dissertation (Article 6) I harness the term *storable world* for virtual worlds (more about ‘virtual’ still later) with ‘storytelling potential.’ Today, three or four years from writing that piece, I would not use the term ‘storytelling potential.’ I do not think that such worlds need to *tell* anything; it is enough that their visitors are encouraged to build (conceptual) story constructs on them.

Empirical progression of an audiobook like *The Old Man and the Sea* (Hemingway 1952) demands *perception*, which in this case is aural. A codex such as *Harry Potter and the Philosopher's Stone* (Rowling 1997) demands perception too, but it might be worth making a small analytical distinction between these two perceptive activities: as with all visual inspection, reading is also a motoric act defined by inputless muscular performance, an act of *motoric perception* (further studies of what counts as muscular or motoric must be left to neurobiologists). Lastly, in addition to mere perception, progressing *Harry Potter* also requires its reader to turn pages. This input-requirement can be discussed as a *kinesthetic* demand.

In contrast to *Harry Potter* the progression demands of *The Old Man and the Sea* and other audiobooks are temporal: to listen successfully you must stay alert (given that you are not in control of slowdown and playback). Such temporal perception requirements can be classified as demands of *time-critical perception*. While these demands are present also in a film like *Casablanca* (Curtiz 1942), progressing this kind of story artifact can be said to demand not only time-critical perception but *time-critical motoric perception* because the type of inspection is visual.

As I now move on to examine storygame artifacts, three progression demands seem to distinguish them from non-videogame story artifacts. The first of those is the *strategic* progression demand. This demand was introduced in the previous subchapter. Unlike progressing the three above story artifacts, progressing a storygame like *Fallout 2* (Black Isle 1998) requires dealing with dynamic components by means of recursive input. In this case the player has all the time in the world to think about her or his inputs, just as in reading *Harry Potter*, yet to keep on progressing in *Fallout 2* mechanical inputs are not enough. Because many of the videogame's characters, items, and their surroundings behave dynamically, progressing through them generates strategic situations in which some input combinations produce desired progress and others do not.

For instance, at one point in *Fallout 2* you can find a character named Dan (Fig. 6), a worried spouse whose wife has gone missing. By promising to look for his wife in return for payment you earn 500 virtual dollars, which enables you to do some virtual item shopping, which again enables you to equip your avatar with new tools, which again gives you access to new locations. As a ruthless option, you may even charge Dan for the search and then tell him that you are not going to do the task after all—which then gives you a bad reputation around that neck of the woods and makes progressing the location either hard or impossible. At the time of meeting Dan, you nevertheless have no idea whether he is really going to pay or what the consequences of your actions will be. In situations like this, figuring out progress-allowing (and progress-hindering) input combinations is a process of cybernetic interpretation that is extremely different from those hermeneutic processes that story consumers normally employ for story construction.



Figure 6. This is Dan, the worried spouse, from *Fallout 2*. The image you see is his profile picture in the *Fallout* Wiki.

The strategic progression demands of storygames need not necessarily be time-free as in *Fallout 2*: overcoming dynamic encounters in *Far Cry 3* demands strategic input in a solid time-critical framework. In such action-filled storygames this usually means making intense choices between moving, sheltering, and healing the avatar; and switching, reloading, and operating the arsenal in the midst of the dynamic environment. Put another way, progressing through these strategic situations requires the player to fulfill additional *time-critically kinesthetic* progression demands. I title strategic progression demands with that addition *time-critically strategic*.²⁰

The distinction between time-critically strategic and time-critically kinesthetic demands means acknowledging that there are also storygame artifacts like *Fez* (Polytron 2012) that do not involve functional dynamic components but do still demand time-critical kinesthetic input, for instance, when leaping over obstacles that move predictably without indeterminacy. Another important note is that storygames with time-critically strategic progression demands do not necessary require motoric perception: the storygame *Papa Sangre* (Somethin' Else 2010) provides all of its output aurally so that no motoric performance is required to perceive it, whilst still setting time-critically strategic progression demands in the hectic fashion of *Far Cry 3*. At this point, a summary of progression demands that may surface on the material plane of story artifacts is in order.

<i>Perception</i>	— exploration	with no input	(statics / dynamics)
<i>Time-critical perception</i>	— time-critical exploration	with no input	(statics / dynamics)
<i>Motoric perception</i>	— muscular exploration	with no input	(statics / dynamics)
<i>Time-critical motoric perception</i>	— time-critical muscular exploration	with no input	(statics / dynamics)
<i>Kinesthetic</i>	— exploration	with input	(statics / dynamics)
<i>Time-critically kinesthetic</i>	— time-critical exploration	with input	(statics / dynamics)
<i>Strategic</i>	— exploration	with input	(dynamics)
<i>Time-critically strategic</i>	— time-critical exploration	with input	(dynamics)

²⁰ As I point out elsewhere in this dissertation (Article 2), a more accurate wording for the ‘time-critically strategic’ demand would be an ‘obstruction that demands strategic and time-critically kinesthetic input, respectively.’ Obviously, I employ the former here to improve readability.

The current state of the argument is thus that whereas several non-videogame story artifacts set perceptive, time-critically perceptive, motoric, time-critically motoric, and kinesthetic demands for progressing their material planes, in storygame artifacts such progression demands may also be time-critically kinesthetic, strategic, or time-critically strategic. The obvious reason for the latter two is the storygame's computational materiality that supports dynamic components and allows their empirical manipulation via input. As always, exceptions are not hard to find. In case you are into tables, do not hesitate to visit the samples chart (Fig. 7) from here.

DEMAND	Perception	Time-critical Perception	Motoric Perception	Time-critical Motoric Perception	Kinesthetic	Time-critical Kinesthetic	Strategic	Time-critical Strategic
	No input				Input			
STORY ARTIFACT								
<i>Old Man and the Sea</i>	.	.						
<i>Casablanca</i>				
<i>Harry Potter</i>	.		.		.			
<i>Patchwork Girl</i>	.		.		.			
<i>Adventure</i>	.		.		.			
<i>Hegirascope</i>		
<i>Fez</i>		
<i>The Warlock of Firetop Mountain</i>	
<i>Fallout 2</i>	
<i>Papa Sangre</i>
<i>Pax</i>
<i>Far Cry 3</i>

Figure 7. Demand analysis of twelve story artifacts. You should definitely question at least *Papa Sangre's* status as an artifact that does not demand motoric perception. Compare the figure with Marie-Laure Ryan's graph (2004, 20).

The concept of the 'gamebook' became popular in the 1970s. The idea of these codex-based story artifacts is that the reader does not just mechanically turn pages from the first to the last, but also makes decisions as in a maze. In its most popular form, progressing

these gamebook artifacts is not unlike reading a novel or solving puzzles: an exploration of static components with the aspiration of coherent resolution. In the demand-based framework these story artifacts thus do not differ in any meaningful way from later hypertext novels such as *Patchwork Girl* (Jackson 1995), or from any basic codices for that matter. The progression demands of *Harry Potter*, *Patchwork Girl*, and the classic gamebook are the same: motoric perception and kinesthetic input (cf. Aarseth 1994).

Not all gamebooks are limited to the exploration of static components, though. One such instance is the single-player gamebook *The Warlock of Firetop Mountain* (Jackson 1982), which requires its reader-player to ‘fight’ monsters by means of rolling dice if she or he wants to make progress. This dynamic factor makes progressing *The Warlock of the Firetop Mountain* a time-free strategic activity with the same demands as *Fallout 2*. Yet there is a seminal material difference between the two: they both are story artifacts, but only the latter is a videogame artifact that evaluates its player. The reader-player of *The Warlock of the Firetop Mountain* may ignore its strategic demands and still expand her or his material explorations to the desired direction, which is not possible in *Fallout 2*.

Perhaps an even more interesting upshot of the storygame’s specific material nature emerges in closer examination of *Adventure* and other ‘classic adventure games’ like *Monkey Island* and *Myst* (Cyan 1993). In addition to basic perceptual requirements, the progression of these time-free storygame artifacts is obstructed solely by conceptual puzzle solving, and as such their demands have nothing to add even beyond those of the most conventional codex. What does, however, distinguish *Adventure* and its kin from *Harry Potter* and *Patchwork Girl* is the former’s ludomic artifactuality: the hermeneutic performance of the adventurer is evaluated so that the extent of its success becomes a condition of empirical progression.²¹

Experiments in electronic literature have resulted in story artifacts that could be considered matching also with the time-critically kinesthetic and time-critically strategic progression demands of storygame artifacts. In Stuart Moulthrop’s hypertextual *Hegirascope 2* (1997) the written text and its links are in constant flux so that in addition to time-critical motoric perception the reader must also exert time-critically kinesthetic inputs if she or he wants to explore specific links. The order in which the nodes and links appear and vanish is nevertheless fixed, and hence *Hegirascope 2* lacks the dynamic components that are necessary for setting strategic progression demands.

Pax (2003), another electronic story artifact by Moulthrop, also incorporates dynamic components that are fundamental to its progression. In this literary machine words and human figures float on the screen, partly affected by a random value generator so that the reader-player produces textual outcomes on the right side of the screen by catching them (Fig. 8). While its progressive reading activity is time-critically strategic no doubt, calling

²¹ I name *Adventure*, *Monkey Island*, and *Myst* as non-dynamic examples because of their canonical status in the hopes of helping you to conceptualize the theory. As it usually happens in game and videogame research, the given examples are not perfectly uncontroversial. A randomly moving ‘dynamic pirate’ was added to the most oft-cited, co-designed ‘Crowther-and-Woods’ version of *Adventure* by the latter, for instance (see Jerz 2007).

Pax a story artifact is at least debatable; the lexia that pile up can hardly be considered story components in any prominent sense. As Moulthrop (2008) himself notes, the words of this ‘litterature potentielle’ are meant not for long-term story construction but momentary consumption, which positively makes it “not so much literature as it is literary” (Parry 2008). This applies to most, if not all, time-critically demanding story artifacts. To make use of John Cayley’s term that originally inspired Moulthrop’s work, perhaps a more appropriate way to recognize the condition of such literary artifacts would be to talk about ‘textual instruments’ (Moulthrop 2003; see Wardrip-Fruin 2009).

The preceding look at the state of contemporary story artifacts (of which the above few examples are a glimpse at best) confirms that the videogame-storygame is scarcely the only of the kind to set strategic and time-critically kinesthetic progression demands. It does seem, however, that almost all, if not all, current story artifacts that set time-critically strategic progression demands belong to the genre of storygames (Fig. 9). The identifying ludom aspect of the videogame as a distinctive story artifact is the *time-critically strategic* progression demand.²²

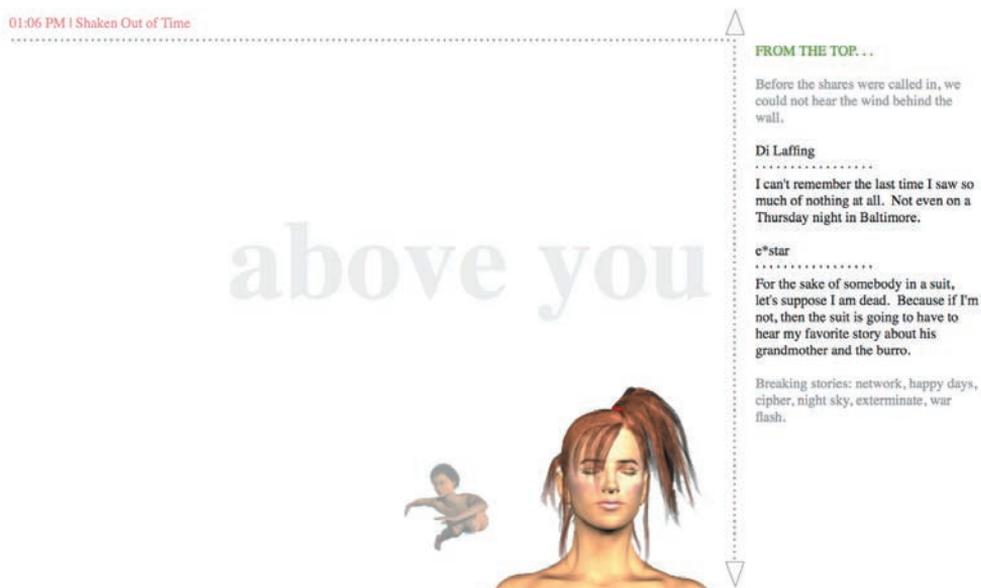


Figure 8. Moulthrop’s *Pax*. My own screenshot.

²² Interestingly, the increment of progression demands, as portrayed in Figure 9, seems to correlate quite well with the historical development of storytelling. If storytelling has grown from ‘natural’ oral narration (e.g. Fludernik 1996) to more ‘unnatural’ forms (e.g. Alber 2013), the demand-based framework might be effective for explaining this evolution (accompany my artifactual ‘audio literature’ with ‘oral narration’ and ‘films’ with ‘drama’). For a powerful take on how these increasing demands may have affected story themes, see Jonas Linderoth (2013b) and compare it with Rolf Nohr (2013).

... An excellent semi-early take on the relationship between ludic activities and literature can be found from Robert Wilson’s (1986) article that, according to Google Scholar, has today been referenced no less than four times: “In literature the interpretive model succeeds the act of reading; in games, the model is an extrapolation of a known code that precedes the act of playing. If literary texts are games, then they are certainly paradoxical ones, to be accounted for in terms of the inverse of those normally apposite to games” (23).

DEMAND	Perception	Time-critical Perception	Motoric Perception	Time-critical Motoric Perception	Kines-thetic	Time-critical Kines-thetic	Strategic	Time-critical Strategic
	No input				Input			
<i>STORY ARTIFACT</i>								
<i>Audio literature</i>	•	•						
<i>Films</i>	•	•	•	•				
<i>Classic literature</i> <i>Classic hypertext</i> <i>Classic adventure games</i>	•		•		•			
<i>Modern hypertexts</i>	•	•	•	•	•	•		
<i>Classic RPG</i> <i>Classic CRPG</i>	•		•		•		•	
<i>Modern RPG / LARP</i> <i>Modern CRPG</i> <i>Modern adventure games</i>	•	•	•	•	•	•	•	•

Figure 9. A generic taxonomy of story artifacts according to their progression demands. Here 'classic' refers to time-free artifacts and 'modern' refers to time-critical artifacts. I derive this distinction from the fact that time-criticality can be considered historically a rather recent artifactual feature. RPG = roleplaying game artifact. CRPG = computer roleplaying artifact. LARP = live action roleplaying artifact. I have included Modern RPG / LARP to represent gamebook or tabletop roleplaying that might set time-critical progression demands, thus acknowledging thatLARPs in general are not very suitable to be discussed as 'artifacts.' Needless to say, this overview is subject to major interpretive complications.

1.4. An Aesthetic Theory of Videogames

More about this theory in Article 6, "Fiction Puzzle: Storable Challenge in Pragmatist Aesthetics" (2014).

The premise that videogame artifacts can be studied as story artifacts assumes that the videogame has reflective, thematically evocative potential. To put it bluntly: because videogame artifacts are capable of evoking stories, they must also be capable of conveying 'messages,' 'meanings,' or 'ideas,' ergo videogames can be studied as an hermeneutic family member of aesthetic phenomena. The previous line of deduction has produced (and will keep on producing) substantial confusion in academic as well as non-academic

discussion of videogame aesthetics. In this subchapter I try to unpack and rationalize that deduction in order to identify the videogame among the hermeneutically established Western conventions that have significantly come to shape the notion of ‘aesthetic.’ Here the videogame is charted as an *aesthetic artifact*.

I start with clarifications. As the previous subchapter has made discernible, I do consider the videogame very much capable of sustaining components from which players can construct ‘stories,’ in both the ‘empirical’ and ‘conceptual’ senses of the term. While the manner in which story components are delivered in most storygames might pose trying challenges to those who wish to convey ‘messages,’ ‘meanings,’ or ‘ideas’ through them, the number of such actualized potentials is so vast today that it would feel like a solecism to add exemplary references. Instead of repeating the speculations concerning what videogame artifacts can aesthetically do—a design question which I probably lack the competence to answer anyway—my aim is hence to probe what videogame artifacts *currently do* in the context of aesthetics and its (more and less story-related) ‘messages,’ ‘meanings,’ and ‘ideas.’

Once more, the point of departure is the videogame artifact in the demand-based framework. This means approaching the videogame as an artifact with demands that are the condition which must be fulfilled if the player is to play in the first place. The historical anomaly of these aesthetic demands becomes most manifest during a museum visit: at the entry you are usually given an audio track or a brochure that tells you how the works should be interpreted; for the videogame parallel paratexts lie hidden in the internet as ‘cheats.’ A museum tour with a walkthrough is an enriched experience. A playthrough with a walkthrough is a torture device.

The key aesthetic of the videogame lies not in ‘understanding,’ but in the *getting to* ‘understand’ (an interrogation of these wicked wordings later). This ‘getting to’ is an aporetic process in the sense that the player has to work at her or his ludic aims under conditions that are at least nominally uncertain. In the conventional hermeneutic frame such striving is fairly ‘meaningless,’ for the message waiting for retrieval is rarely a ‘meaning’ with noteworthy semiotic potency (see Tronstad 2001). For the player the lack of ‘meaning’ is not an aesthetic imperfection, nonetheless, but a prerequisite for another aesthetic that transpires when challenging aporias turn into epiphanies. From Greek *rheme*, a verbal activity that is not indicative but an indication itself (OED Etymology, *rheme*, n.), I propose *rhematics* as a theoretical concept for discussing such ‘meaningless’ aesthetic activities in general, and *aporetic rhematics* for discussing videogame aesthetics in particular.²³

²³ I owe my application of *rhetic* to Genette (1993) in whose narrative theory the term stands for a sign “in and of itself,” that is, a linguistic particle that does not specify any external object “but what it *is*” (22). Compare also to C.S. Peirce’s use of the term, to which the least ambiguous reference would most likely be that of Albert Atkin (2013).

... I should probably also note my awareness of how major aesthetic theorists like Mikel Dufrenne (1973) choose to continue attaching ‘meaning’ to melodies and other rhetic instances; “this meaning is both immanent in the sensuous and proper to it” (227). For rhetic ‘meanings’ of play as a general concept, see Hector Rodriguez (2006), Thomas Hurka (2006) and Eugen Fink (2012).

From the perspective of theoretical aesthetics, John Dewey's pragmatism stands as a solid rhematic prototype. His then-radical declaration of 'art' as a peripheral aesthetic territory paved the way for recent renovations in neuroaesthetics (Nalbantian 2008) and somaesthetics (Shusterman 2008) that have come to complement the original pragmatist agenda:

This task is to restore continuity between the refined and intensified forms of experience that are works of art and the everyday events, doings, and sufferings that are universally recognized to constitute experience. (Dewey 1934, 3)

It would not be far-fetched to juxtapose Dewey's thesis on the art-exceeding continuity of 'refined' and 'intensified' experiences with Johan Huizinga's (1944) seminal study on the game-exceeding continuity of play, naturally without forgetting Jacques Ehrmann's (1968), Ernst Gombrich's (1973), and Robert Anchor's (1978) almost equally seminal (but not equally known) criticisms of Huizinga's work. Just as the majority of ludic activities take place outside the most commonly recognized games, the majority of aesthetic experiences happen far from art museums. Dewey's (1934) founding premise that aesthetic experiences occur all the time formulates an aesthetic theory that is not essentially about 'messages,' 'meanings,' or 'ideas' but about simple organic sensations:

In order to understand the esthetic in its ultimate and approved forms, one must begin with it in the raw; in the events and scenes that hold the attentive eye and ear of man, arousing his interest and affording him enjoyment as he looks and listens: the sights that hold the crowd—the fire-engine rushing by; the machines excavating enormous holes in the earth; the human-fly climbing the steeple-side; the men perched high in air on girders, throwing and catching red-hot bolts. (4–5)

Dewey's intention is of course not to deny aesthetic potential to complex artistic designs, like films in which auditory, visual, narrative, and many other factors have been carefully combined to stimulate their spectators' emotions. Instead, he pinpoints that even the most complex artistic designs ultimately operate in service of the same sensations triggered during everyday activities. Arnold Berleant (1970), a phenomenologist and Dewey's follower, rearticulates:

There would seem, then, to be an intimate connection that art has, not necessarily with the appearances of things, but rather with our experiences of them (44) ... Instead of the analytic grouping of *objects* we now have a perceptual criterion for identifying *situations*. (132)

As I have made quite clear (and here I second Dewey's own writings), I do not assert that pragmatic applications to aesthetics or other scientific sectors would implicate any subordination of analytic artifactual grouping. In sympathy with Berleant, I do however assert the importance of executing those artifactual groupings not solely by the artifacts' technical properties but also by the 'situations' those properties produce in use. Up to the present point this has been the motivating factor of my demand-based framework, which

shall now be extended with a demanding ‘situation’ (not a demand) that was a minute ago called ‘rhematic.’

Rhematics correlate with Dewey’s aesthetic experience as it occurs in the raw. It is an aesthetic that survives without the extra-sensual *thematic* factors whose hermeneutic processing is the customary source of enjoyment of most artifacts you find in art museums, movie rentals, and libraries (not so often in record stores). By this contrast, I do not mean to establish absolute artifact-specific boundaries. Rhematically stimulating components do appear also in the most thematic pieces of visual, audiovisual, literary, and performing arts: a painting simply pleases the eye, a film becomes a spectacle, and a poem has a charming rhyme. Rhematics is not a class of artifacts, but a theoretical concept for the affect that takes place when someone, often unconsciously, experiences sensual pleasure the substance of which cannot be put in words.

For explicating the rhematics of videogame play, Seth Giddings & Helen Kennedy’s (2008) ‘cybernetic aesthetics’ is a fine place to start. According to their conceptualization, the videogame aesthetic derives from the satisfying effect-affect relationship that actualizes every time the player exerts an input and perceives its outcome. The ideal is ‘amplification,’ which occurs when the tiny “effort of pushing the x button results in maximal movement of the avatar” (24). Thereby,

... cybernetic processes allow moments for amplification of affect and effect within the game—generating extraordinary moments of visual and kinaesthetic pleasure (31) (cf. ‘amplification of input’ in Gee 2003)

The cybernetic aesthetic provides a working explanation of videogame rhematics at a small scale. More often than not, the ludic affordances of the videogame artifact are based on these autonomously enjoyable input-output loops: in the absence of them videogameplay would surely lose part of its aesthetic peculiarity.

Yet while Giddings and Kennedy succeed in uncovering some of the videogame’s basic rhematic procedures, it is doubtful whether the cybernetic aesthetic has much power for an actual identification of the videogame amongst the contemporary concourse of technological artifacts (as the authors are well aware). Although the potentially amplified vicarious relationship between the player’s button-press and the avatar’s displayed reaction is of high aesthetic importance, the tactile input-output loop that defines the cybernetic aesthetic concerns not only the videogame but practically all interaction with modern technology, especially since the proliferation of the touchscreen. What is lacking here is the ultimate motive that explains why players choose to execute those ‘meaninglessly’ enjoyable input-output rituals within videogames, instead of just toying around with non-videogame technology.

This is the point at which Graeme Kirkpatrick’s (2011) investigation of the videogame aesthetic gains special prominence. Not content to merely point out *what* constitutes the aesthetic of the videogame, he is also interested in “why these experiences matter” (80). The concern becomes most palpable in the seemingly farcical inadequacy of videogame

play; that players obviously play because they aspire to archive something, but they do not know what *that* is:

We play against games not with them, and our activity is directed from the outset by the urge to bring it to an end, usually by winning. This work is done with the hands but the fact is not normally present on screen. ... The tensions in the hand give rise to the pleasures of gameplay but we only really become aware of controllers when we feel the inadequacy that haunts the whole situation. (110–111)

To me this inadequacy (or ‘awkwardness,’ through which Kirkpatrick later investigates the activity more thoroughly) derives from the videogame player’s bio-ludic desire to exert her or himself for reasons that seldom contribute to her or his physical, social, or political status in total. What seems to make the videogame a certain awkwardly rhematic artifact is that its functional principles are fundamentally identical to those of ‘artworks’ (to produce aesthetic experiences) yet without the sanctifying aura of the cultural sublime that secures as well as justifies the latter’s existence and consumption. In that light, Kirkpatrick’s further approach to videogame play as dance (119–158) ends up reading more as an excuse to evade the troubling question of ludomic awkwardness by means of political sublimation than as a theoretical answer to it. The allegory is fascinating and fruitful, but without its historically recognized position as an acceptable cultural practice—why does *dance* matter?

Again, my proposal for explaining the awkwardness of the videogame artifact leans on its demands, on the requirements that lure the player to particular aesthetic appointments. This does not mean confronting the question ‘why do people play or dance videogames?’ but the question ‘why do players seek such (rhematic) experiences in videogames in particular?’ I argue that in videogames the common dominator of their rhematic highpoints is a certain ‘consummation’ that triggers in the accomplishing of different ludic assignments. This *aporetic rhematic* enables the player to experience multiple consummatory satisfactions that are aesthetically imbued as such; not unlike those that define Dewey’s experience in its integral form:

A piece of work is finished in a way that is satisfactory; a problem receives its solution; a game is played through; a situation, whether that of eating a meal, playing a game of chess, carrying on a conversation, writing a book, or taking part in a political campaign, is so rounded out that its close is a consummation and not a cessation. Such an experience is a whole and carries with it its own individualizing quality and self-sufficiency. It is an experience. (1934, 35)

As Giddings, Kennedy, Kirkpatrick, and many others have convincingly shown, the kinesthetic aspect is indeed one of the most critical rhematic capacities of the videogame artifact. Nevertheless, if the demands of the videogame are opened up for an elaborate analysis, one will soon realize that the same aporetic rhematic maneuvers strategic demands and puzzles as well. Successful leaps in *Mario* and *Far Cry 3*, strategic triumph in *Civilization* and *Fallout 2*, and epiphanic solutions in *Adventure* and *Fez* all result in similar

sensations of consummatory achievement. The three main forms of demand (kinesthetic, strategic, puzzle) act in equally aporetic ways as they provoke the player or the solver to consummate the situation they constitute.

Dewey has taught us that the aporetically rhematic experiences players have with videogames are ultimately nothing more than daily satisfactions: catching a fly, filling one's basket with mushrooms, or locating a misplaced book in a library. The awareness of the flip side, on the other hand—that the player's rhematic experiences are also nothing *less* than daily satisfactions—releases the videogame from all awkwardness as its play becomes as real as reality itself (though not to the extravagant degree of Baudrillard 1994). The fact that videogames stimulate the natural ludic instinct makes playing them awkward only if the player mistreats her or his experience as being artificial.

When a child notices a butterfly, she or he does not try to catch it to pursue an aesthetic experience but to satisfy an unconscious inborn desire. This view has long defined and still defines the firmly dominant 'biologically naturalist' (Myers 2010, 5) school of play research. Now, I see no need to motivate *videogame play* otherwise: what might seem an outwardly awkward act of me turning my console on to do butterfly catching is that same unconscious desire for playful satisfactions. There is no awkwardness in satisfying one's culinary appetite with a cooked meal in place of a 'pure' or 'unprocessed' apple; likewise, there is no difference between satisfying an inborn ludo-rhematic craving by videogame play in place of non-artifactual play activities.

Alas, there is a woeful belief that makes many players still consider the consummations of videogame play 'artificial.' That belief is the common idea of videogames as some sort of falsified *reproductions*. Ludo-semiotician David Myers (2010) provides perhaps the most advanced modernization of this position, being not concerned with the reality status of videogames themselves but perceiving the emotions of videogame play as being

... as 'real' as those accorded real-world experiences, yet the referents of those emotions [as] something other than the real-world referents intended (by evolution and the natural history of the species). For this reason, the computer game experience is both experience in the raw and, simultaneously, an active reinforcement of false experience. (67)

Needless to say, I follow Myers closely with the conception of videogame play as a Deweyan raw activity, yet divert from his view when it comes to the distinction between 'real-world experience' and 'false experience:' to me all experiences are equally real as they take place in the one and the same world in which my experiencing consciousness endures. While several scholarly critics have fought against the older, epistemological 'half-real' positions (to repeat: not Myers' position) mainly by defending the videogame

as something other than ‘fiction,’ I believe there is another, perhaps even more sensitive, word to blame.²⁴

I argue that the foremost reason for many players and scholars to adopt the videogames-as-false supposition is the almost pre-theoretical premise that all “computer games are simulations” (Parker & Becker 2013, 1), or as the premise stands in its more cautious form, “simulation should be taken for granted for all computer games” (Möring 2013b, 191). The logical consequence of the previous is to reduce the videogame simulation (Lat. *simulāre*, ‘imitate,’ ‘counterfeit’) into an artifact that mimics dynamic systems and properties, usually those of the mundane. The logical consequence of that simplification, again, is to theorize the behaviorally functional components of the videogame as some sort of replicas or, indeed, props of fiction—as ‘fakes.’ Although it would be ridiculous to deny mimesis from many of the components that appear, for instance, in *The Elder Scrolls V: Skyrim* (Bethesda 2011), it is certainly worth asking what and to what extent *Skyrim* and its monarch butterflies, imp stool mushrooms, and hundreds of codices actually *simulate*.²⁵

The resemblance between the monarch butterfly (*Danaus plexippus*) I met two years ago during my conference trip to North America and the monarch butterfly I met afterwards in *Skyrim* is unquestionable (Fig. 10). Regardless, discussing the latter as a simulation pays

²⁴ The main source of confusion in the debates on videogames as ‘fiction’ (see Aarseth 2007; Rhody 2010; Bateman 2011; Tavinor 2012; Meskin & Robson 2012) seems to be the word’s dual function. Derived from old French *fiction* (something ‘invented’) and Latin *figere* (to ‘fashion’) the word has come to signify two actions. In the first case an object is fictional because the *creator* has ‘invented’ or ‘fashioned’ it, rather than simulating it from the mutual source system that people have the seamy practice of calling ‘real life.’ This is the sense in which the film *Star Wars* (Lucas, 1977) is fictional in contrast to a documentary film. In the latter case an object is fictional because the *percipient* must ‘invent’ or ‘fashion’ its potential behavior. This is the sense in which the light sabers of the *Star Wars* film are fictional in contrast to the one in the hand of my plastic action figure (for which I can still invent fictional behaviors too). Consequently, if I refer to the videogame *Knights of the Old Republic II* (LucasArts 2004) with the adjective ‘fictional,’ I am right or wrong depending on the perspective: most of its items like light sabers have not been simulated from the ‘real life’ source system, yet I do not have to invent their behaviors for they can be tested by manipulating them via an input device. Call that *semi-fictionality* if you will. Now, all semi-fictionality is not unique to the videogame: the documentary film is also semi-fictional because the potential behavior of its representations cannot be tested, and the action figure is semi-fictional because it is not simulated from the ‘real life’ source system. As I hint elsewhere in this dissertation (Article 6), one of the few ludo-theoretical concepts with full fiction potential seems to be the in-game videogame puzzle, i.e. the *fiction puzzle*: it is both conceptual and non-simulative (and perhaps even dissimulative).

²⁵ To torment you with another lengthy footnote, I shall further straighten up my notion of the verb ‘simulate’. For me, non-intelligent artifacts like videogames and their algorithmic components hardly ‘simulate’ even if they are considered simulations. I hereby follow Bogost (2006, 98) and many other game and videogame scholars (see Möring 2012; 2013a) who suggest the act of ‘simulating’ be considered ‘subjective.’ To me, then, to simulate is to perform an intentional exertion of mimicry; i.e. doing so requires an intelligent simulator with simulative intent (cf. ‘denotation’ in Goodman 1968; Walton 1990; Elgin 2009). Videogame designers, for instance, may simulate by designing simulations, but videogames and their components can never do so themselves. Again, it would also be possible to employ ‘subjectivity’ here as a relativist concept to allow statements like ‘To her the videogame simulates this...’ yet that seems to have little theoretical momentum (see Karhulahti 2014).

excessive attention to details that are rather unconnected to its dynamic existence. How the monarch butterfly of *Skyrim* behaves is indeed related to the behavior of *Danaus plexippus*, but the similitude is not a factor that has any significance to it being ‘simulated’ *per se*. While the behaviors of videogame components may reflect a ‘source system’ (see Frasca 2003), they may also be ‘self-referential’ (see Myers 2003) so that their signifying value is determined by the other componential behaviors of the same videogame: a source system is not a necessary condition for their inter-functional ludomic vigor. There should thus be also an alternative, non-simulative way to structure behavior without imitation, presentation in exchange for representation. Let that be, with an awareness of resorting to a dangerous term, *virtualization*. (See Karhulahti 2012; cf. Ryan 1999; Aarseth 2003; Shields 2006; Lehdonvirta 2010.) (For the defining role of premeditated source systems in simulations, see Humphreys 1991; Hartmann 1996; Fox-Keller 2002; Grüne-Yanoff & Weirich 2010; Pias 2011.)

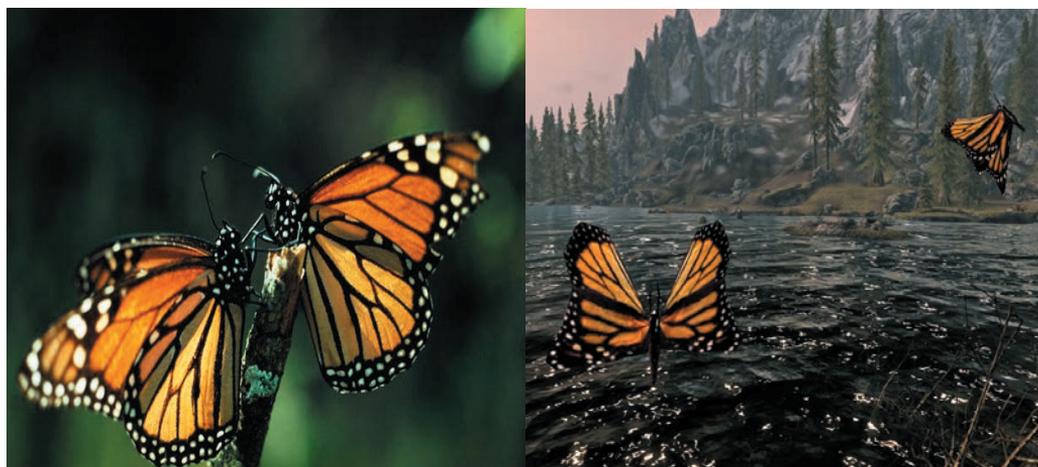


Figure 10. Monarch butterflies in North America (left) and monarch butterflies in *Skyrim* (right). I must confess I did not take these photos myself. The one on the left is by Bianca Lavies, and the one on the right is by EbonySkyrim.

To once again avoid some acute misunderstandings, I do not intend to claim that videogame components (like monarch butterflies and imp stool mushrooms) altogether lack simulative features. Obviously, the creators of *Skyrim*'s monarch butterfly have tried to simulate quite a few properties of the *Danaus plexippus*. Moreover, while there seems to be no specific mundane parallel for the imp stool mushroom, one can reasonably claim (see Fullerton 2008; cf. Doležel 1998) that its virtualized properties, like minimal carry weight, have still been simulated—or should I say, *simtualized* (after ‘simulate’ and ‘virtualize’)—from the Platonic mushroom in general (Fig. 11). My criticism is not that videogames and simulation do not match, but that in videogame play the presence of a source system, which is obligatory for simulations and simulacra by definition, is often irrelevant. This is because the videogame is, systemically speaking, an ‘autopoietic’ artifact (see Klabbers 2003) in which the values of its components are constructed by the

artifact itself, not by any source system. Even if players come to recognize the source, they barely care. Here is Sudnow (1983) on the videogame player:

One says you gotta get the frog to the other side. The other says you gotta keep from getting hit by asteroids. But the hands don't reveal the difference, twitching on for dear life. (7)

In a not dissimilar vein, most players of *Skyrim*, I believe, do not even know that there exists a specific mundane source for its monarch butterflies but not for imp stools. The possible correspondences of simulation indeed facilitate interacting with videogame components, yet it is the virtualization of self-referential properties (which may or may not derive from a source system) in general that defines and enables videogame play in the first place.

To have a readable word for the virtualized properties of videogame components, let them be *behavioral properties*, a term that I consider somewhat neutral and thus more fitting than 'simulated' (or 'simtualized') properties. Accordingly, by behavioral properties I refer to those properties that determine the inter-functional behavior of various active components in videogames and virtual environments alike. The monarch butterfly is a beautiful example of such a component: the capacity to fly and move with a specific speed and manner in the realm of *Skyrim* is one of its behavioral properties, just as are its weight that defines how many of those things my avatar can carry, its alchemic composition that defines what ingredients might be extractable from it, and so on. The behavior of the monarch butterfly in *Skyrim* is thus autonomously functional in the realm in which it exists (which does not mean that it cannot have functions outside of that realm in the fashion of Castronova 2001).



Figure 11. Imp stool mushrooms in *Skyrim*. This cluster was discovered by Coronus.

The behavioral autonomy of videogame components functions as an analytic rationalization of my argument for the *aporetic rhematic* as the aspect that most strongly identifies the videogame as an aesthetic phenomenon. What enables the videogame artifact to provide these experiences that are not dependent on the manageability of 'meaning' is the autonomous character of videogame components; especially in solitary videogame play, in which their behavioral properties are functional only in relation

to other videogame components. The weight, value, and alchemic composition of the imp stool mushroom become functional (not ‘meaningful’) to me only because these properties delimit and delineate my own behavior in, and only *in*, the realm of *Skyrim*. When I obtain my bag filled with imp stool mushrooms the consummation of the situation provides me an aporetically rhematic experience that is aesthetic not because of its interpretive potential outside *Skyrim post hoc*, but because of the completion of the episode inside *Skyrim ad hoc*. Here play truly makes *sense*.²⁶

To posit rhematic mushroom collecting in parallel with those, often thematically associated, doings that people seek in ‘higher’ arts, I reclaim Dewey’s (1916) observation of *reflection* as the determiner of what he acerbically refers to as an ‘intellectual’ experience. Here the concept of ‘simulation’ and its ‘source system’ become of explicatory value.

An aesthetic experience drawn from *Crime and Punishment* (Dostoyevsky 1866) tends to be heavily dependent on how the reader is able to reflect on its events in terms of the novel’s source systems; the moral codes of human behavior, to name one. A meaningful interpretation of Raskolnikov’s criminal actions does not require the reader to have committed crimes, but it does require her or him to read Raskolnikov as an ethical human being in St. Petersburg—as a simulation, so to speak. Next to such reflectively derived experiences, *Skyrim* stands as an ultimate Deweyan utopia; a self-governing “universe of non-reflectional experience” (1916, 19) in which the difference between simulated and non-simulated components is irrelevant. The consummatory satisfactions it provides come from the consummations themselves.

Although videogame artifacts provoke non-reflective rhematic experiences at the expense of reflective thematic experiences, by no means does this mean the latter’s absolute absence. In my playthrough of *Skyrim* I happened to encounter an in-game book titled *The Real Barenziah* that recited the life story of a queen whom I had met ten years ago in an earlier installment of the Elder Scrolls series, *Morrowind* (Bethesda 2002). In a technical sense, my reading of *The Real Barenziah* was as thematic and reflective as my reading of *Crime and Punishment*.²⁷

²⁶ Later next autumn I might have a similar experience when I get a chance to look for organic mushrooms from the forest nearby. The aporetic rhematic of that experience (as far as filling my bag with mushrooms is concerned) will not differ from that of *Skyrim* in any significant way. The core pleasures of videogame play are the rediscovery of what has made life livable for quite a while now.

²⁷ Judging by the 2-3 hours that I spent reading *The Real Barenziah*, the size of this edition was between 20,000 and 30,000 words, only a tithe of the 211,000 words in *Crime and Punishment*.

... Now that I am here, it will not hurt to slightly anticipate the concept of *self-reflection*, which I suggest elsewhere in this dissertation (Article 6) as a thematically potent ‘rhetoric’ for puzzles: puzzle solvers may come to experience not only rhematic but also thematic awakenings along with their epiphanic realizations. A solution that triggers a thematic awakening is self-reflective in the sense that the solver knows it already beforehand but does not cognize it until her or his opening insight. This is what I consider the distinguishing factor between self-reflection and reflection, the latter into which I classify also those aspiring ludic instances that have nowadays become much-analyzed under the ‘procedural rhetoric’ of Bogost (compare 2005 to 2007). See also ‘intensional/extensional’ semantics in Lubomír Doležel (1998) and ‘primary/secondary’ pleasures in Paul Martin (2011a; 2011b).

The reflective reading of *The Real Barenziah* was certainly not the sole occurrence of its sort. As my quest of finding the dragon god Alduin approached its end, an historian at the College of Winterhold told me about an ancient document, an Elder Scroll, which was said to conceal the final knowledge required to finish the calling I was destined to fulfill. After hours of miscellaneous ventures I ultimately managed to get my hands on the scroll only to find out that it was illegible. So I brought it to my historian friend who thus spoke:

There's nothing simple about an Elder Scroll. It's a reflection of all possible futures and all possible pasts. Each reader sees different reflections through different lenses, and may come away with a very different reading. But at the same time, all of it is true. Even the falsehoods. Especially the falsehoods.

In addition to the ludic function of my Elder Scroll—namely that bringing it to the College of Winterhold triggered events that made finalizing the ongoing quest possible—for me the document also became a subject of heavy thematization. The historian's rather high-flying piece of dialogue (one of *Skyrim*'s 60,000 prewritten lines) provoked me to read the Elder Scroll as a metaphor for the ludomic story-realm itself: as a spatiotemporal chronotope with countless possible worlds and traversal possibilities (cf. Rockwell 2002; Wei et al 2010; see Zoran 1984; Brandão 2006). Supported by the fact that the 'Elder Scrolls' are not mere virtual items that I vicariously carry in my avatar's inventory but also the label of the 20-year-old videogame series (of which *Skyrim* is the second-latest installment), the description turned into a reflection of the multicursal and multiteelic universe in which every playthrough is a look 'through a different lens,' making what happens during my playthrough 'true' but at the same time maintaining the falsehoods (other possible playthroughs) 'true' as well.

While instances like the above are an important reminder of the fact that reflective insights do occur in videogame play, it would be a (common) mistake to measure the aesthetic capacity of the videogame against the hermeneutic conventions they represent. In videogame play the concept of 'reception,' which has heretofore been the starting point in Western aesthetic consumption, finally loses its dominance: the player does receive, but only a margin of what she or he has to invest.

As in videogame play the increased demands of investment invert the power relation between the artifact and its 'audience' (another word with an unhappy etymology), the mechanisms of aesthetic value generation return to the workaday sensations and perceptions toward which the animal has strived for all of its existence. The need for such radical alteration of attitude may well produce vertigo in a modern consumer, which is of course natural—an hermeneutic attempt to reflect on aesthetic artifacts is a mere sign of sophistication in videogame playing societies. Inelegantly, exploiting the distorted situation thus seems to be easier for the unpretentious who face the virtual with their artless approval, as a sensually pleasing experience among others. And *this* will be a tough piece for the art historians to digest, for many years to come. The aspect that identifies the videogame as an aesthetic artifact is the *aporetic rhematic* and its clinical satisfaction of achievement.

2. Terminations

While it is evident that an artifact with such cultural impact as the videogame needs to be researched, it is less evident *why* it needs to be researched under an institution like (game and) ‘videogame research.’ As my stance in this chapter is defensive, it suits well to start with a general argument for the existence of the videogame as a subject of academic study. The thoughts on which my argument relies are not my own; I borrow them openly from Peter Galison (1996), a renowned contemporary physicist who coined the term ‘trading zone’ to describe what happened some decades ago along with the invention of the computer:

... a chaotic assemblage of disciplines and activities: thermonuclear weapons, enhanced A-bombs, poison gas, weather prediction, pion-nucleon interactions, number theory, probability theory, industrial chemistry, and quantum mechanics. No entities bind them together; they fall into no clear framework or paradigm; they have no single history that can be narrated smoothly across time. Yet the practice of these activities was sufficiently congruent in the years just after World War II for Enrico Fermi, John von Neumann, Stanislaw Ulam, and others to move back and forth across widely divergent domains. What they shared was not common laws, and most certainly not a common ontology. They held a new cluster of skills in common, a new mode of producing scientific knowledge that was rich enough to coordinate highly diverse subject matter. Their common activity centered around the computer. (119)

Galison uses the above ‘trading zone’ as an example to describe how the scientific practice operates as a whole. He distinguishes this ‘trading zone’ view as an alternative to what he considers as the dominant models of science; namely, that science is an arena that is “divided according to the objects of its inquiry” (118). While it might seem that having the videogame as an ‘object of inquiry’ entails me to speak for the latter position, I would rather wish to suggest that an ‘object of inquiry’ like the videogame can also function as a ‘trading zone’ in the very same way as the computer does (or used to do).

The videogame that unites philosophical, psychological, technological, historical, social, and numerous other research practices is not a shared ‘scientific tool’ like the computer, yet nor can it be perceived solely as an ‘object’ of scientific interest. As many of the crucial

academic questions that derive from the videogame (think of the previous concerns on storyology, rhematics, and virtuality for instance) scarcely deal with the artifact *per se* but rather with the compound phenomena that surround it, it appears more than clear to me that the videogame artifact holds a somewhat matching scientific position as Galison's computerized 'trading zone;' being capable of gathering multiple fields and disciplines without necessarily being a stable one itself.

I do not see the above object-oriented interdisciplinarity as a problem for (game and) videogame research, but rather as a solution to its burning search for a uniting methodology: identifying the borders of the zone through something like the videogame is a requirement for all non-videogame researchers to be able to enter the zone (cf. Malaby & Burke 2009). The foremost task of (game and) videogame research thus becomes the identification of its own image—which naturally does not mean ontology in the limited sense of this dissertation alone but also studies of (game and) videogame cultures (Consalvo 2007; Shaw 2010; Adamus 2012), communities (Tronstad 2003; Linderoth & Bennerstedt 2007; Sihvonen 2011), scenes (Swalwell 2003; Wimmer 2012; Enevold 2014), experiences (Mäyrä 2007; Folkerts 2010; Leino 2012b), performances (Atkins 2006; Seegert 2009; Dubbelman 2013), franchises (Surman 2007; Duncan & Gee 2008; Bainbridge 2014), histories (Parikka & Suominen 2006; Kocurek 2013; Kirkpatrick 2015), sounds (Whalen 2004; Jørgensen 2010; Reale 2014), consumers (MacCallum-Stewart 2010; Drachen et al 2011; Chee 2012), players (Dibbell 1993; Bartle 1996; Hamari & Tuunanen 2014), play (Gander 2004; Barr et al 2006; Vella 2013), and of course the things themselves (Fernández-Vara 2015).

The dissertation has come to a point at which my onto-theoretical efforts will be given a final justification. All of the etymologies, preconceptions, and the demand-based framework were choices that led me to very specific notions of 'gameness' and 'videogameness.' The first part of this chapter explains the taking of those (carefully) restricted perspectives. Another question still lacking justification is the utility of videogame geneontology. Even if the demand-based framework is a useful setup for identifying the videogame through ludom aspects such as *performance evaluation* (as a game phenomenon), *dynamics* (as a ludic phenomenon), *time-critical strategic input* (as a story phenomenon), and *aporetic rhematics* (as an aesthetic phenomenon), the value of these findings still remains unclear. The second part of this chapter concludes the dissertation by reviewing that concern.

2.1. Against Game Fetishism

Interdisciplinarity is not the calm of an easy security; it begins effectively (as opposed to the mere expression of a pious wish) when the solidarity of the old disciplines breaks down—perhaps even violently, via the jolts of fashion—in the interests of a new object and a new language neither of which has a place in the field of the sciences that were to be brought peacefully together, this unease in classification being precisely the point from which it is possible to diagnose a certain mutation.

— Roland Barthes (1977, 155)

After a brief historical survey I find a ‘computer game’ (not a hypothetical one or a puzzle) academically already discussed in the early 1950s by Walter Cushen (1954). Without being able to fully access this particular publication I cannot say much about the object it deals with, but it seems probable (see Cushen 1955) that it is not quite like the one I am focused on. Why has it been important to identify the contemporary videogame as an individual phenomenon? Or for that matter, to narrow the word ‘game’ into a specific concept? For game and videogame scholars equipped with their disciplinary instruments the world might (understandably) appear as a rhizome of game-thing; however, for those instruments to remain and become truly serviceable their primary targets of practice, ‘games’ and ‘videogames,’ must be identified.

I begin my defense by returning to Jakobson (1959). In this famous essay he consults a study that shows how

Russians, prone to personify the weekdays, consistently represented Monday, Tuesday, and Thursday as males and Wednesday, Friday, and Saturday as females, without realizing that this distribution was due to the masculine gender of the first three names (117)

Jakobson’s example nicely illustrates the fundamental dilemma of ludo-ontology. If the identity of ‘Monday’ depends on the reader’s linguistic (and other) background, even more so must the identities of ‘game’ and ‘videogame.’ For the theorist of games and videogames this produces no problems as she or he is not interested in the word, the signifier, but in the signified—the phenomenon itself. Theorists of games and videogames can use any words they want when referring to their subjects of interest as long as the words they use are properly defined.

To establish a working semantic network between scholars interested in the same topic, and to avoid general terminological chaos, academic disciplines have nevertheless settled with conventions that more or less successfully aspire to regulate the meanings of words inside their shared discourses. These conventions are defined by the specific demands of the discipline, as languages “differ essentially in what they *must* convey and not in what they *may* convey” (116). If game and videogame research is a discipline, or better, an *interdiscipline*, the terms it works with can and must contain jargonized meanings that are useful not universally but for its own exclusive purposes. That is a necessary condition for efficient communication.

Several terms I have made use of in the present enterprise are good candidates for the jargon category. ‘Dynamic,’ ‘static,’ ‘strategic,’ ‘kinesthetic,’ and ‘rhematic,’ can all be found in other discourses with drastically different (but etymologically linked) meanings than those they carry here. Whereas my ‘dynamic’ is functional chiefly within the study of games and videogames, the ‘rhematic’ maintains its function in a fairly broad cultural sphere. None of the word-meaning combinations may ever escape this dissertation, but all of them serve a specific function within it.

With semantic networks alike, it is worth asking to what extent scholarly terminologies should follow the trends of the day. This concerns especially those terms the meanings of which have been shattered by recent cultural transformations, the notorious ‘game’ as a paradigm. As Woods (2007) suggests:

In the evolution of play it is clear that the computer did not merely augment existing types of games and play experience, but facilitated entirely new ways of playing which have, perhaps merely by convention, been termed games. (6)

After the coming of the videogame, people have started to see games everywhere. Toys, puzzles, films, novels, artworks, school environments, work environments, frequent flyer programs, social interaction and life itself are no longer games in metaphorical slang alone but also in the strict analytical sense. In this fulfillment of the Huizingian wet dream, ‘game’ has become a synonym for practically all objects as well as activities that are connectable to the *ludus* in one way or another, however incidental the connection may be. For the study of games, and perhaps also for the general health of language, such ludo-anarchy is not a happy state of affairs: as words inflate, they eventually become useless—something that seems to have already happened to ‘interactivity,’ ‘immersion,’ and ‘multimedia,’ to mention some modern buzzwords. Again, in academia the way out is quite simple: clarifying the definition clarifies the function. Yet this cure is as effective as taking a painkiller for a broken limb or printing new money into a broken economy: it works, but only for a moment.

Regardless of the fact that language is a living system, enriched and altered continuously by impermanent and unpredictable mutations, its evolution is not completely random. For this linguistic logic one can usually thank developments in science. As Gadamer (1989) aptly observes, “we no longer call whales fish because now everyone knows that whales are mammals” (434). To paraphrase: all science, not philosophy alone, is essentially a critique of language.

As the preceding pages indicate, the videogame is a sort of whale-fish. It has survived in the ocean of games, but differs markedly from most of its fellow creatures. I use the expression ‘sort of,’ for my intention has not been to utterly deprive ‘game’ status from the videogame; doing that would conflict too radically with etymology, present scientific beliefs, and general common sense. I do contend, nevertheless, that researching the videogame phenomenon as a game does require the researcher to make critical observations about the ‘game’ as a shared theoretical concept, and perhaps more importantly, also about the numerous other words describing the numerous other phenomena that surround it and ultimately define its identity among them.

Perhaps my foremost contribution to these unavoidable concerns of terminology has been the identification of the *puzzle* (which in fact is the genuine whale-fish here) as an independent ludic phenomenon. To the disciplined study of games and videogames the consequences of this ‘disconnection’ are scarcely negative. Because the distinction is not arbitrary but rests on an etymologically insured theoretical basis, I trust it enables both

games and videogames to be studied with more precise analytical tools than before. With those tools in use, the puzzle maintains its position in game and videogame research, yet no more as a ‘borderline game or something between games and other things’ but as an actual theoretical concept subject to sophisticated criticism and reevaluation.

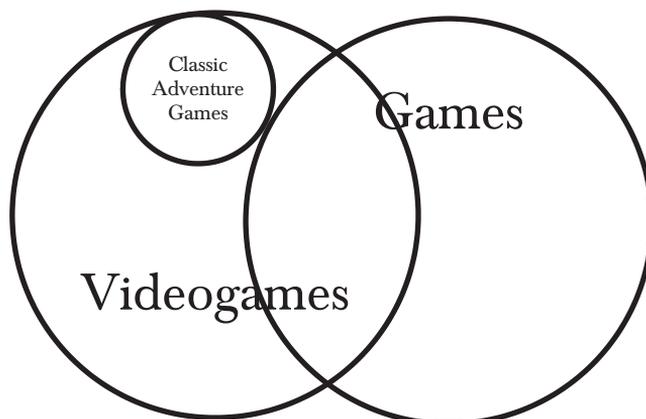


Figure 12. Games, videogames, and classic adventure games in my geneontology. I thought about adding more (potential) nongame phenomena inside the videogame bubble, but then realized that it would just mess up the image. Use your imagination.

Another theoretically motivated disconnection that derives from my general theory of games concerns the *classic adventure game*. Due to the classic adventure game’s lack of both strategic and time-critical demands its structural status as a game appears to be negative; while simultaneously, its mainline role in videogame history insinuates otherwise. In my estimation this contradiction is not an inconsistency that needs to be made consistent but rather a morphological insight that may fulfill its critical potential only after decades of ludo-linguistic development. Perhaps one day an artifact can be accepted as a nongame and a videogame at the same time (Fig. 12).

Being fully aware that what I have suggested is contradictory not only with several contemporary academic standpoints but also with non-academic ones, I would like to appropriate a citation from Cyril Darlington (1948), an important geneticist and a philosopher of science:

Scientific discovery is often carelessly looked upon as the creation of some new knowledge which can be added the great body of knowledge. This is true of the strictly trivial discoveries. It is not true of the fundamental discoveries ... These always entail the destruction of or disintegration of old knowledge before the new can be created. (2–3)

If the study of games and videogames is a practice of science, and if that practice is to produce fundamental discoveries, it cannot limit itself to the creation of ‘new knowledge’ (which is not trivial either) but it must also be ready to destroy ‘old knowledge’ when the evidence so infers. Dewey (1920), Darlington’s good friend and colleague, continues:

From the standpoint of scientific inquiry nothing is more fatal to its right to obtain acceptance than a claim that its conclusions are final and hence incapable of a development that is other than mere quantitative extension. ... Science is a pursuit, not a coming into possession of the immutable; new theories as points of view are more prized than discoveries that quantitatively increase the store at hand. (ix-x)

While I do not consider this dissertation to belong to the radically destructive class (to avoid proclaiming my discoveries ‘fundamental’), I do sense that one of the key challenges of the presented analytical aspirations has been the defying of that ‘old knowledge’ which governs the prevailing preconceptions and pre-conceptualizations of ‘puzzles,’ ‘games,’ ‘videogames,’ and other phenomena whose wordly signifiers project more than is theoretically possible to cope with. Needless to say, this does not mean that any of my theorizations are necessarily ‘right;’ every theory must be received with severe skepticism and, as it usually happens, be shown unreliable (or even worse: uninteresting) at the earliest convenience. Like Darlington’s (1948) scientist who finds his colleagues “willing to provide all the doubts and misgivings that he himself has failed to mobilize” (4), the utmost service I can request from you is to show me where I err.

The most thought-provoking critique I have gained so far has probed the benefits of using the hammer as a destructive research tool, calling into question the actual usefulness of pursuing a theory-based ontology that does not really *add* to the amount of knowledge but more likely *damages* it. Being hardly the only scholar in the field with these dubious methods, I tried to come up with the answer by learning from my peers. Unfortunately, they all seem to share the same problem, and the usual solution appears to be to evade the critique by labeling their efforts as contributions to the mystical ‘understanding of games’ (and other things). I dedicate the last part of this dissertation to a treatise on this ‘understanding’ to which I am evidently supposed to contribute.

2.2. Post-Heideggerian Hammer in Game and Videogame Research

Mr. H. said to Mrs. M.

– *Fruits don’t exist.*

– *You’re mad, said Mrs. M.*

– *Let’s shop, and you’ll see.*

They went to a large fruit store that had fruits and nothing but fruits; it was the fruit section of a kilometers long veggie hall.

– *May I have a fruit, said Mr. H.*

The seller gave him an apple.

– *I don’t want an apple, but a fruit.*

The seller gave him a pear.

– *I want a fruit, not a pear.*

The seller, frustrated, brought the man a watermelon as large as a child’s head.

– *I don’t want a melon, but a fruit, insisted Mr. H.*

The seller lost his temper and piled up all the figs, dates, peaches, oranges, mandarins, lemons, and plums in front of Mr. H.

– *Are you deaf, sir? I don’t want any of those but a FRUIT, said Mr. H.*

The seller looked at him, silent and offended, but the fierce look in his eyes said: What in the hell is the fruit this man wants?

— Eeva-Liisa Manner, *Runoja 1956-1977* (my trans. from Finnish)

With all the figs, dates, peaches, oranges, mandarins, lemons, and plums out there, who cares about fruits anyway? This question is not significant only for those who seek to define fruits, but also for those who seek to ‘understand’ them in general: for all fruit theorists and ontologists.

The videogame is a tricky fruit in a sense that it is darn fast. Whereas biologists can spend their whole lives analyzing the same set of fruits that remain somewhat unaltered for centuries, a few decades have already reformed the fruits of the videogame scholar into something that requires new theoretical instruments (without discarding the old ones). This is because of the split-second hybridization enabled by the unconstrained interbreeding of culture. In positioning the videogame on the universal timeline, it is unsurprising to find the models of Darwin and Mendel fail.

If the videogame is to be studied as a species of culture, it cannot be derived simply by looking at its historical roots, as biologists do, for it is not an offspring of two or three species but a cross-cultural genetic nightmare, a cyber-hybrid that thrives *now*. Recognizing the videogame as a distinct subject of study entails hammering it out from the cultural ecosystem and forcing it into an unnatural manmade object—*artifact*—because without this painful process it remains nothing but loose substance. In institutional terms, if game and videogame research is to be considered something other than ludology (the general study of ludic phenomena for me) it must identify its subject(s) of study with an awareness of the subject’s post-created artificial origins. Thus, when it so comes to the just-presented videogame geneontology and its demand-based theoretical inroads, none of it needs to be read as contributions to the sacred ‘understanding;’ it is all a forthright attempt to identify the phenomenon, *Artefactum ludus ludus*, which needs to be identified because of its institutional significance (to start with one pragmatic instance).

I do not blame any of you who, perhaps inspired by the undying discoveries of Darwin and Mendel, find my videogame geneontology a poor substitute for a theory that would capture the videogame as an evolving cultural organism instead of as an artificially circumscribed, transient ‘phenomenon.’ The identification of the videogame (and other similar phenomena) as potentially passing entities is nevertheless a categorical necessity in the farther-reaching project of interpreting cultural progress which, according to Iser (2003), “no longer seeks to control entropy but sets out to show how culture works” (99). Abandoning the ideology of the videogame as something eternal and realizing that its existence and theoretical exploration benefit from interim identification vindicates its distinction as an artificial set of boundaries

... insofar as one has to find out what is entailed if these boundaries are crossed. Distinctions allow us to conceive as unities what they have separated, and these tend to become reciprocal foils for one another. Varela calls these unities systems,

whose internal structure and external relations present themselves as targets for exploration. (100)

To locate my view on the videogame as a conceptually stable but an empirically transient *uniexistential* phenomenon within the context of larger cultural comprehension, I contrast it with the seemingly popular conception that could be termed *cinexistence* (Greek *cine*, ‘motion’): ‘games’ and ‘videogames’ comprehended as mutating signifieds in the endless evolution of language. The latter point of view was reviewed not long ago by Jonne Arjoranta (2014) who, leaning on Gadamer, suggests hermeneutic interpretation as its key instrument:

A hermeneutic conception of defining things would mean that each definition is understood as a starting point for a new act of defining, or in other terms, as a pre-understanding for a more complete understanding ... Games are a sociocultural phenomenon and, therefore, they should be defined and redefined in a hermeneutic circle that enhances our understanding of them.

If games and videogames are seen as cinexistential phenomena that change along with the evolution of their linguistic signifieds (provided I can still use the term ‘phenomenon’ here), the founding hermeneutic idea of a “more complete understanding” of games or videogames is absurd: as the interpreted transforms, the criteria of complement transform too. For she or he who wishes to comprehend games and videogames as evolving cinexistential phenomena the ‘understanding’ of them does not complete but, rather, *adjusts*. The interpretation method required to achieve that end, I argue, is not so much hermeneutic as it is cybernetic—recursive loops interminably re-identifying the interpreted.

Contrarily, the ontological study of games and videogames as uniexistential phenomena does seem to profit more greatly from the hermeneutic method: aiming at completing the ‘understanding’ of its conceptually stable target as long as it exists (and perhaps longer). The videogame geneontology I have presented might hence be thought of as an hermeneutic attempt to distinguish the videogame as a single micro loop in the endless chain of its linguistic re-identification; as one small wave in the streams of technological, ludological, storiological, aesthetical, and other turbulences of academically disciplined culture.

The videogame, as a uniexistential popular phenomenon and as a scientific subject of study, so becomes independent also of those foreseeable anomalies that will one day be forced into the public discourse as new ‘videogames.’ By rejecting the videogame’s existence as an evolving essence of culture and instead identifying it as a specific cultural instance, the thesis at hand also accepts and honors the fragility of its subject: if the hype on nanotechnologies, organic computing, and other embryonic innovations ever materializes into the mainstream, the videogame, *Artefactum ludus ludus*, will be superseded by species that entail discrete identification. At such time, game and videogame research may likewise turn into a protoscience after being superseded by another branch of enquiry, not totally unlike alchemy was by chemistry and astrology by astronomy.

Having rather strongly identified the videogame as a distinct cultural phenomenon, an important reminder is called for. Despite its ontological distinction I do not assign the videogame any phenomenological distinctiveness: the experience of videogame play does not differ from other mundane experiences, notwithstanding its conventions. Such neutral phenomenology is the price that I pay for holding that the objects, intentions, and emotions that govern videogame experiences stand on a steady ontic position. To ratify the importance of this pragmatist view, I once more return to Dewey (1920), who was perhaps the first modern thinker to truly realize the function of taxonomical regularity as the basis of both scientific development and everyday management:

The *universality* that belongs to scientific theories is not that of inherent content fixed by God or Nature, but of range of applicability—of capacity to take events out of their apparent isolation so as to order them into systems (ix) ... [Their] regularity signifies, of course, that the particular case is not treated as an isolated particular, but as one of a kind, which therefore demands a *kind* of action. (46)

While the videogame *experience* cannot be distinguished from other experiences, *having* and *researching* that experience requires its source phenomenon, the videogame, to be distinguished as a ‘kind,’ as an artifact with its own regularities that make it functional to those concerned. This applies to all cultural phenomena that people engage with, from sports to cinema.

While anyone can watch a documentary film, say, *Fahrenheit 9/11* (Moore 2004), only those who see the film as ‘documentary’ have access to the features that make it the cultural product it is. By the latter I do not mean accepting the film’s content as a set of documented facts, but acknowledging the product’s practical position; being able to observe its details that have interpretive potential, and subsequently, being able to analyze, criticize, and laugh at those details without being laughed at. Like cinema, and the documentary film as its sub-phenomenon, the videogame and its forms from *Tetris* to classic adventure games need to be identified within the pandemonium of cultural phenomena, above all, *for practical purposes*. Instead of just generating my ‘understanding’ of videogames, I have thus branded and analytically taxonomized them so that they can be played and not just played with.

For things are objects to be treated, used, acted upon and with, enjoyed and endured, even more than things to be known. They are things *had* before they are things cognized. (Dewey 1929, 21)

By choosing to identify the videogame in terms of geneontology my hopes have been to forge the vagrant set of cultural particulars into a particular species of culture with its own regularities of practice. Be those hopes fulfilled, the strategy guide at hand has led you to know better than before how to treat, use, and *play* the artifacts that I have chosen to study as ‘videogames,’ for want of a better word.

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Appendix: Glossary

Attention! The function of this glossary is but to aid those who find the terminology of the dissertation difficult to follow. Please do not cite the below clarifications as my definitions for the terms.

Adventure game. A term that scholars use synonymously with either *storygames* in general or *classic adventure games* in particular.

Aporetic rhematic. A framework for aesthetics that is based on the sensual pleasures of struggle, achievement, and consummation. See *aporia*, *rhematics*.

Aporia. An unresolved situation that is followed by an *epiphany* if resolved. See *challenge*, *aporetic rhematic*.

Artefactum ludus ludus. The *videogame* as a cultural species. See *ludom*.

Augontology. A structuralist methodology which aims at constructing open *ontological* models that can be extended unlimitedly.

Behavioral dynamics. A synonym for *dynamics*.

Behavioral properties. The properties that determine the inter-functional behavior of *components* in *videogames* and other *virtual* systems.

Challenge. A subjectively determined *aporetic* situation with an uncertain outcome. See *demand*.

Cinexistence. A view of *cultural phenomena* as mutating signifieds in the endless evolution of language. See *uniexistence*.

Classic adventure game. A *storygame* that does not set notable *strategic* or *kinesthetic* demands.

Closure. In *videogames*, a *resolved* or *terminated* videogame state.

Component. In *videogames*, algorithmic things or objects such items, characters, and environments (which are often *virtual*).

Cultural phenomena. Conventionalized proceedings of intelligent animal behavior.

Cybernetic interpretation. A concrete method for dealing with *dynamic* things, objects, and *components* by means of recursive looping and input. See *hermeneutic interpretation*.

Demand. An objectively determined requirement (of usage) that may turn into a *challenge* for a subject. See *demand-based framework*, *progression demand*.

Demand-based framework. A framework for *theoretical* research that examines phenomena through the demands that those phenomena set for their use.

Determinacy. The range of predictability and lack of variation. See *indeterminacy*.

Dynamics. The nature of a *component* that behaves in an *indeterminate* manner. Note how in other academic contexts the term occasionally refers to components that behave in any manner. See *statics*.

Enigmatology. A term used by some professionals for the study of *puzzles*. See *metagrobology*.

Epiphany. A *resolving* situation that follows the overcoming of an *aporia*.

Fictionality. A property of things, objects, or *components* that derives either from a thing, object, or component being invented (rather than *simulated*) by its creator, or from the thing, object, or component being conceptual (rather than material). See *fiction puzzle*, *semi-fictionality*.

Fiction puzzle. A *puzzle* that surfaces in a reality different from the mundane, being both conceptual and non-*simulative*. See *fictionality*, *semi-fictionality*.

Game. A *ludic phenomenon* with functional *dynamic components*.

Game research. The study of *games*. See *game studies*, *videogame research*.

Game studies. A term that scholars often use to cover all *ludology*, *game research*, and *videogame research*.

Gameplay condition. A *videogame* player's attempt to remain a *videogame player* by fighting artifactual resistance and avoiding states that undermine the activity.

Geneontology. A methodology that pursues an *ontological* structure for a target phenomenon by theorizing the differentiating relationships it has with other *cultural phenomena*.

Hermeneutic interpretation. A method for uncovering meanings in static things, objects, and *components* by means of circular reasoning. See *cybernetic interpretation*.

Indeterminacy. The range of unpredictability and variation. See *determinacy*.

Kinesthetic challenge. If altering the input device alters the required nontrivial effort, the *challenge* is kinesthetic.

Kinesthetic demand. A *demand* that asks the *player* to input. While technically speaking oral and brainwave input may not have much to do with kinesthetics, such activities can still be theorized as kinesthetic demands.

Losing. A negative ludic state. See *subjective losing*.

Ludic interpretation. *Hermeneutic* or *cybernetic* interpretation that aims at comprehending *components* in terms of ludic success.

Ludic phenomena. *Games, videogames, puzzles,* and other phenomena that create and/or derive from different modes of play.

Ludom. A shorthand for *Artefactum ludus ludus*.

Ludom aspect. An aspect that distinguishes the *videogame* from another *cultural phenomenon*.

Ludology. The general study of *ludic phenomena*.

Ludo-ontology. The *ontological* study of *ludic phenomena*.

Metagrobiology. A term used by some professionals for the study of *puzzles*. See *enigmatology*.

Multi player game. A *game* that provides multiple *player positions*. See *single-player game*.

Nonkinesthetic challenge. A *challenge* that is not kinesthetic. Nonkinesthetic challenges are fundamentally cognitive, but since the *kinesthetic challenge* too asks for cognitive effort it is better to classify them as nonkinesthetic rather than cognitive.

Ontology. The study of what phenomena are.

Overgame. A *game* that is played by multiple actual *players* according to mutually agreed rules that stand on one or more ludic artifacts, such as *videogames*.

Performance evaluation. A *ludom aspect* that enables *videogame* play that is not subject to any mutually agreed rules.

Player. A being that has filled a *player position*.

Player position. The categorical locus of *ludic phenomena* that is to be filled by one or more *players*.

- Progression demand.** A requirement for progressing a *storywork* or a *story artifact*.
- Puzzle.** A *ludic phenomenon* without functional *dynamic components*.
- Puzzle demand.** A *demand* that asks the *solver* to deal with *static components*.
- Resolution.** A *ludic state* in which an *aporetic* situation turns into an *epiphanic* situation of *closure*.
- Rhematics.** A framework for aesthetics that is not based on *hermeneutic* meaning making but rather on the pleasures of ‘sense.’ See *aporetic rhematic*.
- Semi-fictionality.** A property of things, objects, and *components* that are either conceptual (in existence) or invented (in creation) but not both. See *fictionality*.
- Simulation.** A simulation is a thing, object, or *component* (or process) that has been created to stand as an imitation of an existing or possibly existing source.
- Simtualize.** To simtualize is to create a *virtual* imitation of an existing or possibly existing source.
- Single-player game.** A *game* that provides a solitary *player position*. See *multiplayer game*.
- Solver.** Someone who struggles with a *puzzle*.
- Statics.** The nature of a *component* that either behaves in a *determinate* manner or lacks the assets that could be considered behavioral in the first place. See *dynamics*.
- Storiability.** In *story artifacts*, the prominence of *components* that evoke *story construction*.
- Storiology.** The study of *story artifacts* and their theoretical dimensions.
- Story artifact.** A subjectively determinable class of artifacts that evoke conceptual *story construction*. See *storywork*.
- Story construct.** A mental chunk of events, existents, and their indexical relations.
- Story domain.** An indefinite but finite multiplicity of conceptual *story constructs* derivable from a *story artifact*.
- Storygame.** A subjectively determinable class of *videogames* that evoke conceptual *story construction*.
- Storywork.** A synthesis of an empirical *story artifact* and its conceptual *story domain*.
- Strategic demand.** A *demand* that asks the *player* to deal with *dynamic components*.
- Subjective losing.** A negative emotional response to an emergence of a *ludic state*. See *losing*.

Subjective winning. A positive emotional response to an emergence of a ludic state. See *winning*.

Termination. A ludic state in which an *aporetic* situation is aborted into a *closure* (with or without *resolution*).

Thematics. A framework for aesthetics that is based on *hermeneutic* meaning making, often to evoke conscious reflection of popular knowledge.

Theory. A structural perspective to one or more research questions that produces applicable sets of consequences.

Typontology. A structuralist methodology which aims at constructing open *ontological* models that can be modified endlessly.

Vicarious kinesthetics. Kinesthetic engagement with an artifact by means of an input device.

Videogame. A term that most scholars use synonymously with ‘computer game,’ ‘digital game,’ and ‘electronic game.’

Videogame research. The study of *videogames*, including those that are not *games*.

Virtuality. A property of a *component* with *behaviors* that are functionally interrelated to one or more components of its realm.

Winning. A positive ludic state. See *subjective winning*.

Unexistence. A view of *cultural phenomena* as conceptually stable but empirically transient entities within the context of larger cultural comprehension. See *cinexistentiality*.