



**UNIVERSITY
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Conveying interpretations of the past with interactive narratives

School of History, Culture and Arts Studies
European Heritage, Digital Media and the Information Society
Master's Thesis
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Summary: This master's thesis sketches a theory upon which a heuristic for the effective conveyance of scholarly historical interpretation of the past to a non-scholarly audience can be built. For this heuristic to yield methods that do not only respect academic standards of critical inquiry, but simultaneously ensure that thus produced historical knowledge can be imparted to and retained by laymen, the interplay of a range of factors has to be understood first. This thesis builds on and connects theories and concepts from philosophy, psychology, media- and game studies, cognitive sciences, semiotics, and computer science. It takes a stance that emphasizes the capacity of scholars and laymen alike to form informed and critical interpretations of the past under the right circumstances. In order to facilitate these circumstances most effectively, it takes a pragmatic approach which rejects maximizing either of the variables in the triplet *verisimilitude*, *veracity*, and *verifiability* at the expense of the other.

Keywords: history, education, interpretation, narrative, storytelling, media, interactive, games, digital

The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

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Note: When speaking in an exemplary manner about a certain individual's actions, reactions or inclinations, I will use the gender neutral pronoun "their", rather than using "he or she" (or "his or her" respectively" or alternating between "he" and "she" ("his" / "her")¹.

¹ c.f. <https://www.youtube.com/watch?v=46ehrFk-gLk> for a brief discussion of the advantages of using 'they' rather than gender specific pronouns in English.

1 Introduction

"In the Spring of the year 1924 the young German physicist Werner Heisenberg went on a walking tour with the great Niels Bohr in Denmark, Bohr's homeland. The following is Heisenberg's account of what Bohr said when they came to Kronberg Castle. 'Isn't it strange how this castle changes as soon as one imagines that Hamlet lived here. As scientists we believe that a castle consists only of stones, and admire the way the architect put them together. The stone, the green roof with its patina, the wood carvings in the church, constitute the whole castle. None of this should be changed by the fact that Hamlet lived here, and yet it is changed completely. Suddenly the walls and the ramparts speak a different language. The courtyard becomes an entire world, a dark corner reminds us of the darkness of the human soul, we hear Hamlet's "To be or not to be." Yet all we really know about Hamlet is that his name appears in a thirteenth-century chronicle. No one can prove that he really lived here. But everyone knows the questions Shakespeare had him ask, the human depths he was made to reveal, and so he too had to be found a place on earth, here in Kronberg.'"²

In the fall of 2013 I traveled down the west coast of Turkey from Istanbul to İzmir. On the way I got to visit three significant archaeological sites of ancient Greek culture, which in those times extended well into Asia Minor. Those were Troy, Pergamon, and Ephesus. All three were interesting and distinct from one another in a multitude of ways, but it was one glaring difference between Troy and Ephesus in particular that eventually lead me to write this thesis. This difference lies in the way both sites presented their past, that is, how palpable the histories that they were attempting to tell felt to me, their visitor.

Troy is fundamentally an archaeological site with relatively little padding of historical interpretation, which in itself is mostly located outside of the actual site. The premises of Troy themselves are accessible via roped-off paths from which one can see little more than ancient brickwork that protrudes from the ground, and occasional pieces of stone columns and cuboids, both often with ornaments. Not one 'Troy', but nine settlements bearing that name, were built on top of one another over the course of 3,500 years, which makes it impossible to entirely lay open either of these without destroying the ones on top of it. The nature of on-site information reflects this situation: The visitor gets little more than signs stuck into the ground, marking the respective layer of settlement with Roman numerals from I to IX, and occasional boards with extensive paragraphs of text about e.g. a particular building technique or the Schliemann Trench. The former did impart hardly any understanding of Troy to me, the layman visitor, and were more confusing than anyhow helpful, while the latter proved to be quite hard to parse both due to the volume and relatively abstract nature of the information given, and no apparent connection between one and the next. In short, there was no apparent effort to guide the visitor through the premises as a whole in a coherent fashion. Granted, doing so is no easy feat when there is very little visible material to work with, and with the nine layers creating a kind of historical flip image in the same space.³

² Bruner 1984, 45

³ The one place in Troy where those layers can actually be seen in relation to each other is a trench that

Those shortcomings, however, could also bear the opportunity to highlight the tension between history and the past by marking the 'interpretedness' of any history one could tell, *especially* against the backdrop of the multiple 'pasts' that are competing with one another in Troy.

Ephesus affords an entirely different experience. The site is in a much better condition over all, and no (apparent) layers of settlements are blocking access to or hiding one another. Even though more easily digestible historical information was available on boards in and around the buildings and via an audio guide, Ephesus was big and visually impressive enough for me to wander around without having to actually absorb that information: It seemed to invite the mind to compose its own ideas and stories, or take them from whatever medial source one might have been exposed to, just to graft them onto the substrate of a place that still seems to be "evocative of its former life."⁴ Ephesus is not just dug up but restored to a considerable degree. Even though the restoration was done employing the technique of anastylosis, in which original elements are used as much as possible and substitute components are visibly distinguishable as such, it does not mitigate the very immediate impression that what one sees is 'how it must have been'.

I do probably still 'know' more about Troy, not because of the information on site but thanks to two students of history who were with me and managed to puzzle together a more coherent picture of the past. Ephesus however has many more vivid images attached to it, and has overall left a greater impression to this day. It seemed to me that while Troy was lacking the means to convey historical knowledge of its past (as histories) to visitors in a compelling way, in Ephesus the compelling impressions and emergent stories were abundant, but at the expense of a clear distinction between those and the uninterpreted past.

Neither situation was satisfactory to me; neither could be chosen as the 'greater good' or the 'lesser evil' over the other. The question I started asking myself was whether there is a way to convey historical knowledge more effectively over all, by harnessing the strengths of both sites without also admitting their weaknesses. To do so effectively, all the elements that are at play in conveying history to a non-scholarly audience would have to be taken into unreserved consideration. It seemed to me, however, that those elements were mutually weakening, if not excluding one another: The presentation should be compelling, but not merely entertaining; it should present a faithful interpretation of the past and convince the recipient of it exactly to the degree that it can be scholarly defended. To do so, it should not just captivate the senses, nor resort to the historian's authority, but provide an opening for critical reflection – all without losing its more immediately

Heinrich Schliemann dug "to explore the Mound of Troy in the 1870". It is exactly that exercise which (for me) made the past of Troy more palpable, which is widely disapproved of in modern times, "in the process Schliemann 'destroyed a phenomenal amount of material'" (Stokes 2005).

⁴ *Wikipedia, the Free Encyclopedia*, s.v. "Ephesus", (accessed 2018-10-22), <https://en.wikipedia.org/w/index.php?title=Ephesus&oldid=864076918>

sensory and aesthetic appeal.

In short, the three criteria of conveying history that should be achieved simultaneously are *verisimilitude*, *veracity*, and *verifiability*. I am by no means the first to have this realization. Approaches to this topic have been made from many different angles, but could be sorted into two broad methodological categories: First, those descriptively examining some of the aforementioned elements at play, i.e. with an interest in answering *what* works and *why* in a theoretical and reflective manner. Second, those practical efforts which seek to explore *how* to convey history practically in an experimental and incremental manner, based on heuristics and educated guesses. This thesis is an attempt to draw together insights and theories mostly generated by the former group of methodologies so as to answer the questions typically stated in the latter. It is theory crafting, motivated by an application-oriented perspective. As such, it also attempts to contribute to integrating the academic fields which are only loosely joined in my study program of European Heritage, Digital Media, and The Information Society, and simultaneously offer more exhaustive answers than any of those disciplines could provide on its own. Since the three stated criteria do at least stand in some tension to one another, exhaustive answers are also needed to prevent inadvertent precedence of one or two over the other(s).

My own academic and professional background lies in software development, media studies, and game design. My particular academic interest focused on interactive narratives and augmented reality, which was reflected in the initial research question of this thesis: "How can storytelling by means of interactive narratives be employed to convey a meaningful interpretation of the past?" Only halfway into the thesis will I have gathered the vocabulary to reformulate it in a more precise manner: "What are the desired semiotic qualities (of any given medium) to effectively convey or facilitate a veracious interpretation of the past?"

This thesis consists of six chapters. After the introduction, chapter two will briefly present the practice that scholars of history use to create an understanding of the past, and the challenges and necessary shortcomings that arise when attempting to directly transfer this practice to another medium which by necessity operates under different rules. It will establish more precisely which questions will have to be answered for the effort of this thesis, and reject some answers that will be shown to be unsatisfactory. Chapter three will then discuss narrative as the mode of understanding for both historiography as well as everyday life. It will highlight its problems, but argue that narrative is, for philosophical and psychological reasons, a necessary, effective, and ultimately redeemable *modus operandi* for historical inquiry as well as conveyance of history. Having thus preliminarily established narrative as a means suitable for the effort of this thesis, I will discuss the modalities of its 'implementation' in chapter four. The inextricable relation between the structure, conveyance and reception of medial information will be analyzed by intersecting

two ontologies of media. Special emphasis will be given to nonlinear and interactive media, as those are more recent forms which are more likely to yield new pathways for the conveyance of history. Chapter five will then argue that multimedial interactive narration has the capacity to facilitate a medial reception which does in fact allow for the three aforementioned criteria of *verisimilitude*, *veracity*, and *verifiability*. Specific conditions which have to be met, and some tools to do so, will be laid out there.

I will intersperse this thesis with perspectives on how the theoretical frameworks I am presenting relate to, and how my findings could be applied to, the sites of Troy and Ephesus. They could be regarded as 'theoretical case studies'. To provide more contrast, and partially also to forego the hazard of just intersecting theory with practice where it happens to be most opportune, I will use one more case study: The German Emigration Center.

The German Immigration Center has taken on that task of bridging the gap between verisimilitude, veracity, and verifiability so as to mediate history effectively, but under fundamentally different circumstances than Troy and Ephesus: Not being limited by the physical properties of an ancient archaeological site, it was built with the liberty to design the visitor's whole experience from start to finish. Even though it is located in Bremerhaven in Northern Germany, a harbor city from which more people embarked to the New World than from anywhere else in Germany, it does not exhibit a place, but the history of German emigration over all. It achieves this by leading the visitor through that part of the emigration story which is common to everyone who left for the New World between the early 1800s and 1930s: Arriving in the harbor city from all over Germany and other parts of Europe, embarking on a ship, spending weeks at sea, arriving at an immigrant inspection station, and then dispersing to the different parts of the respective country.

The details and circumstances of those stories did vary profoundly depending on the time period, class, and destination of the particular emigrant. Therefore the different rooms, or objects within rooms, all represent one particular context authentically and often immersively, but are always contrasted with either dissimilar historical impressions, or more general and abstract information. For example, in the harbor 'room' (see Illustration 1) an overall authentic looking scene is contrasted with audio stations where one can listen to general (and therefore detached) historical information, but also the word "Abschied" (leave/farewell) written on the wall, which is of course totally inauthentic, but still serves to evoke or draw on the visitor's own emotions.



Illustration 1: Harbor scene with mannequins in historical clothing from different decades of the 19th century and the word "Abschied" (leave/farewell) on the wall

The admission ticket also doubles as a so-called iCard, a plastic card equipped with an RFID chip (radio frequency identification), through which one (actual) emigrant's story can be accessed at different stations throughout the exhibition. This way the visitors can easily empathize with one particular emigrant's perspective without fully assuming their role.

This oscillation between immersive experience and reflection reached very much the goal which I also aspired to, but at the time of me visiting Troy and Ephesus I could not precisely analyze the German Emigration Center's methods, nor formulate why it achieves these effects, even though (to my uninformed mind) it clearly seemed to do so.

2 Intersecting historical epistemologies and digital games

By using one exemplary proposal made by Clyde et. al. in their paper "Beyond the 'Historical' Simulation: Using Theories of History to Inform Scholarly Game Design," I will attempt to lay out the generally accepted practice that historians use to create 'history', as well as a directly (naively) derived approach to transfer this practice into creating history by means of video games: With what they call the *gamic mode* of history, defined as "the construction of scholarly historical arguments as scholarly games,"⁵ they claim to have found a way to reproduce the textual means of creating an account of the past (i.e. one 'history') in the medium of video games. The first property of such an account, if it is to claim any veracity, is that it has to convey an argument about

⁵ Clyde et. al. 2012, 2, emphasis mine

the past, one which "consists of facts that are converted to evidence and arranged according to a set of rules for that particular argument via interpretation"⁶ rather than just "of an appeal to rhetoric."⁷ While the authors assert that those goals will have to be met in different ways depending on the medium, they insist that their approach must not leave any room for any (unintended) "sense of veracity outside of the arrangement of evidence and interpretation of the argument."⁸

The underlying motivation to guide the interpretation of a historical narrative's recipient so rigidly is derived from the authors' preference for one of the three broad epistemological approaches to historical scholarship that Alun Munslow calls *construction*, *deconstruction*, and *reconstruction*:

Deconstructionism is the approach which bases "the individuals [sic] understandings on their own experience of the evidence or arguments."⁹ In other words, while facts and arguments are presented to the reader of the narrative, they don't come bundled with the 'instructions' for the one (at least in the respective context) right way to make sense of them. As this suggests "an unknowable past, or past that can be known in a multitude of ways,"¹⁰ it falls short of Clyde et. al.'s expectation of what historical scholarship should achieve. The equation of 'unknowable' and knowable 'in a multitude of ways' sheds light on the notion that a *truth claim* deserving of this name can only exist in a context where it and all other such claims about the same matter are mutually exclusive. The notion that there is no, and cannot be, any one authority that marks a statement as objectively true or false would align this approach to postmodernism in Clyde et. al.'s view.

Reconstructionism, then, "attempts to descriptively recreate the past as it actually was through the use of sources, which by their nature as facts are objective."¹¹ Opposed to the deconstructionist approach, its underlying assumption is not only that there can be one correct interpretation of the past but that the veracity of this interpretation is linked to the 'thickness' (to borrow Clifford Geertz' term) of the presented facts. One could even claim that in this understanding, the dichotomy between 'history' and 'past' becomes false because it can be bridged: The effort of creating history is the effort of creating a verbatim 'carbon copy' of the past. Clyde et. al. are missing the interpretative guidance of this approach as well, and criticize numerous video games for making use of this approach "as though the volume of facts accounted for by their system is directly equivalent to the degree of its validity."¹²

6 Ibid., 6

7 Ibid., 5

8 Ibid., 6

9 Clyde et. al. 2012, 7

10 Ibid., 7

11 Ibid., 8

12 Ibid., 9

Where *deconstructionism* is underserving and *reconstructionism* is overserving the purpose, the authors present *constructionism* as a third way, that which "the vast majority of historians practicing today" follow.¹³ The core difference to the other two epistemologies lies in its regard of the connection between the past and history, "analysing how and what individual pieces of evidence can do, and what conclusions [...] can be established through evidence relationships."¹⁴ By not only laying out the historical data, which is done by the other epistemological approaches as well, but accompanying it with a discussion about the adequate interpretation of such data, they provide a demarcation of the exact scope within which it can be comprehended. The assumption is that by doing this, the *truth claim* actually meets the conditions described above.

While there is no reason to doubt that this epistemology will actually produce the most veracious accounts of history, and while it might be the only one that lives up to the high standards of historical scholarship, the authors' attempt to translate it to a mode of digital games (said *gamic mode*) can be objected to in two ways:

First, limiting *digital* games in such a way that they prevent any unintended interpretation of the data presented is a feat not easily accomplished. The authors are aware of this: "In response to this characteristic of the medium of games, a gamic mode of history needs to be particularly rigorous on the points of evidence and interpretation."¹⁵ Games, to employ a framework laid out by Hunicke et. al., consist of a set of rules (the *mechanics*) which, by being executed, create a dynamic "run-time behavior [...] over time."¹⁶ These *dynamics* are then interpreted in one way or another by the player. It is thus not possible to predict the progression of a particular game session (be it digital or not) only from looking at its mechanics. A game whose progression over time would be predictable in the way the authors require it to be would cease to be one, as it would not provide any options of action to its players, let alone facilitate any self-expression (which is a common but not universal property of games).

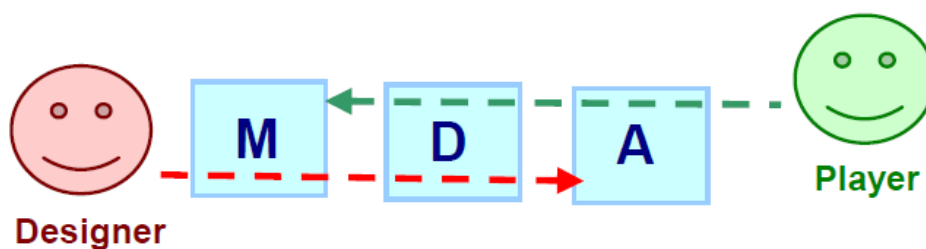


Illustration 2: Perspectives on the MDA framework (Hunicke et. al. 2004, 2)

13 Ibid., 7

14 Ibid.

15 Ibid., 6

16 Hunicke et. al. 2004, 2

In non-digital games, say board games, the players are those agents that execute the game's *mechanics*. Playing such a game is then, by definition, only possible if the players actually know the entirety of those mechanics.¹⁷ Their role is dichotomous in the sense that they give rise to the game's *dynamics*, while simultaneously receiving that behavior and responding to it emotionally. As the game progresses, the players create a narrative of the events in the game, which is exactly the point the authors want to avoid: "Narrative is so closely tied to our understanding of action, and as history is the study of past action, that if the historian's prose does not present a cohesive narrative to the reader, the reader then creates one."¹⁸

This aspect becomes even more problematical, as Jeremy Antley states, when considering digital games, which are "by their very nature, *closed* constructions whose operation the player cannot, on face, intrinsically know or predict without engaging first in a large degree of play."¹⁹ As a digital game is executed by a computer – and not the players –, the player can only approximate a full understanding of the mechanics (here: algorithms) by interpreting the dynamic behavior which unfolds as a response to their actions, but only by the computer's mediation.

One important constraint to these considerations has to be considered at this point. I unwarrantedly equated the 'historical narrative' that Clyde et. al. speak of to the player's interpretation of any game's dynamics (the *aesthetics* in the terms of Hunicke et. al). Not every game, be it digital or not, facilitates an interpretation of its dynamics as a narrative, or even any kind of interpretation – in a literary sense – at all. Consider the example of Janet Murray interpreting the puzzle game Tetris²⁰ as

"a perfect enactment of the over tasked lives of Americans in the 1990s – of the constant bombardment of tasks that demand our attention and that we must somehow fit into our overcrowded schedules and clear off our desks in order to make room for the next onslaught."²¹

This seems so odd because Murray chooses to interpret the workings of the mere mechanics – and Tetris can offer little more than that – as if they alone qualified to convey a meaning beyond the frame of the game at its run-time.²² The interpretation is not invalid, just arbitrary.

This thesis will rely on the kinds of games which have some capacity for storytelling, that is to say those games whose dynamics can yield something that can be interpreted as 'narrative'. What

17 Or if they have otherwise access to them, typically by means of a rulebook.

18 Clyde et. al. 2012, 8

19 Antley 2012

20 Bullet-Proof Software 1989

21 Murray 1997

22 To borrow a distinction by Jesper Juul, Tetris falls into the category of games of emergence, which consist of "a small number of rules that combine and yield large numbers of game variations". Those are opposed to games of progression, in which the game designer maintains "strong control of the sequence of events" (Juul 2005). "Emergence games have strategy guides" while "progression games have walkthroughs" (Juul 2002).

this means in detail will be explored throughout the thesis. I am using the term 'game' in a very broad sense here to avoid limiting my scope prematurely. Games like *Tetris* however are barren of any potential for this storytelling effort and therefore lie outside of that scope. Of course, this is not to say that they should be dismissed strictly as games.

An important aspect of narrative in digital games is that it unfolds dynamically. This might seem trivial after reading the previous paragraphs, but it entails an important change in the structure of narratives (and hence the structure of their reception): They are, opposed to traditional texts, non-linear. In the context of their notion of a *gamic mode* of history, Clyde et. al. still call the recipient of narratives 'reader' rather than 'player' or just 'recipient' throughout the whole paper, which might explain why they do not concern themselves with the shift such a structural change has.

The objection to the notion of a gamic mode of history, then, is twofold: First, the peril to leave the recipient of any such game any space which they can 'fill' with their own interpretation is very hard to avoid. Second, if Clyde et. al. succeed in their effort, what they will create can hardly be called a 'game': Although there is no one commonly agreed-upon definition of this term, virtually all attempts include the notion of a state which might develop favorably or unfavorably from the player's perspective, and whose development the player can influence. For comparison, two of the more well-known definitions of game, apart from the discussed MDA framework, shall be presented here:

"A game is a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequence of the activity are negotiable."²³

"A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome."²⁴

This is not to say that Clyde et. al.'s effort is pointless, but it does not avail the vast potential inherent in digital games.

For the effort of this thesis, another important distinction should be made here. As should become clear by contrasting the definitions by Juul and Salen & Zimmerman respectively on the one hand, and the MDA framework by Hunicke et. al. on the other, the two former elicit a much more traditional notion of what it means to play a game. They speak of 'engaging in conflict' and 'exerting effort' to reach a 'quantifiable outcome'. They focus on games as systems, that, as I would take it, can be played more or less skillfully, to the end of 'succeeding' or 'beating' the game or other players in it, or 'losing' or 'failing' at trying to do so. The MDA framework does no such thing. Rather, it focuses on the user's actions, but to the end of invoking experiences (the *aesthet-*

23 Juul 2005, 36

24 Salen & Zimmerman 2004, 80

ics). It can thus be used in a more versatile fashion to describe any kind of interactive system, like one that aims for interactive storytelling. I will come back to do so later in this thesis.

This chapter only lead to a realization that my research question, stated in the previous chapter, cannot be answered in a straightforward way. This is for two reasons: There is a high, and commonly agreed-upon standard of writing and mediating history. It is not trivial to uphold this standard when the mediation is attempted not in the form of a *constructivist* non-dynamic narrative, but in an interactive system (as defined by Hunicke et. al.) with its dynamically unfolding narrative and the consequently larger scope of possible interpretations. Clyde et. al.'s gamic mode of history can be interpreted as an attempt to maximize for veracity and verifiability at the expense of verisimilitude, even though the latter seems to be very quality by which games could make a difference in his trilemma.²⁵ Maximizing for a verisimilar experience like "many history-themed games that revolve around war" do, using "historical facts and rhetorical story telling techniques borrowed from prior media forms (e.g. film and television) in an attempt to convince the player that they are telling the 'real' story"²⁶ is a more obvious trap. The experience of an interactive narrative that only unfolds in response to the player's actions presents a greater challenge because it alters the understanding of the presented (pieces of the) past: "In games, as soon as the player has agency to make meaningful choices and they are playing with the past, every action is a counter-factual."²⁷ The demanded demarcation of possible interpretations is still necessary, but cannot be achieved in the same fashion under changed circumstances.

3 Making sense of the past

In an attempt to find another solution that can work in the context of interactive narratives, I will have to examine more thoroughly the notion of narrative and the role it plays in human lives. I hope that through a sufficiently nuanced understanding I will be able to make the necessary caveats that are needed to make historical interactive storytelling workable and to free narrative (and especially the reception thereof) from the deep reservations with which it is regarded by Clyde et. al.

In this chapter I will predominantly build upon two approaches from the philosophy of history and psychology respectively: Paul Ricoeur in his works *Narrative Time* and the "magisterial"²⁸ *Time*

25 This is not to say that linear and/or non-multimedial narratives cannot seem verisimilar. In fact, the same caveats about a mere 'appeal to rhetoric' has to be made with any tool used to convey historical arguments.

26 Clyde et. al. 2012, 10

27 Ibid., 11

28 White 1987, 170

and Narrative, and, later, on Jerome Bruner with *Acts of Meaning* and *Life as Narrative*. Both claim a deep interwovenness of narrative in the structure of human understanding of events and states in the world, and accordingly touch upon what is commonly called the human condition. It seems that recourse to such suspiciously wide, yet fundamental grounds is necessary, after considering the problems with conveying history through narrative that have been discussed above. Bruner states:

"The fact that the historian's 'empirical' account and the novelist's imaginative story share the narrative form is, on reflection, rather startling. It has challenged thoughtful students both of imaginative literature and of history since Aristotle. Why the same form for fact and fiction? Does the first mimic the second or vice versa? How does narrative acquire its form?"²⁹

It is apparent that several strands of cultural practices and meaning-making, be it for either (only ostensibly purely?) aesthetic or practical purposes, are running together in the narrative form. From a practical perspective, it is a necessary prerequisite to untangle those in order to know how to use employ them for any means of historical mediation.

3.1 Narrative as an expression of human experience of time

Ricoeur's interest in his works is even more fundamental. It lies in the "relation between language, narrative discourse, and temporality."³⁰ His presupposition is that narrativity is the "language structure that has temporality as its ultimate referent."³¹ This statement can be unpacked by answering the following questions:

1. *Why* is temporality so fundamental or important that all efforts of narrativity ultimately point to it?
2. *How* does narrativity then refer to temporality?

He answers these by initially contrasting, and then merging, Augustine's *Confessions* and Aristotle's *Poetics*. Augustine discusses the fundamental aporia of the being and non-being of time: "How can time exist if the past is no longer, if the future is not yet, and if the present is not always?"³² He notes the large inventory of positive terms that are used to refer to (events in) time, and especially how an uncanny number of those terms use spatial vocabulary like 'take place' or 'passing time'. The according question by Augustine that follows: "If the future and the past do exist, I want to know *where* they are."³³ He solves this, seemingly rather bluntly, by shifting all three conceptions of time into the present: "The present of past things is the memory; the present

29 Bruner 1990, 45

30 White 1987, 171

31 Ricoeur 2002, 169

32 Ricoeur 1984, 7

33 Saint Augustine, 18:23, emphasis mine

of present things is direct perception [...]; and the present of future things is expectation"³⁴.

However, the utility of a somehow spatial time is not entirely captured yet, because what it also promised was not only a location at which it could be found, but also the measurability that stems from this quality. How, then, can one speak of different lengths of time, if past and future only exist in the mind and the present is only an ever-changing "pointlike"³⁵ instance? As with the threefold conception of time, the answer (but not the solution) lies in shifting the matter into the human consciousness (what Augustine calls soul): "It is in the soul, hence as an impression, that expectation and memory possess extension."³⁶ To give some practical sense to this abstract framework, I shall follow Ricoeur's example and cite an entire illustrative paragraph:

"Suppose that I am going to recite a psalm that I know. Before I begin my faculty of expectation is engaged [tenditur] by the whole of it. But once I have begun, as much of the psalm as I have removed from the province of expectation and relegated to the past now engages [tenditur] my memory, and the scope of the action [actionis] which I am performing is divided [distenditur] between the two faculties of memory and expectation, the one looking back to the part which I have already recited, the other looking forward to the part which I have still to recite. But my faculty of attention [attentio] is present all the while, and through it passes [traicitur] what was the future in the process of becoming the past. As the process continues [agitur et agitur], the province of memory is extended in proportion as that of expectation is reduced, until the whole of my expectation is absorbed. This happens when I have finished my recitation and it has all passed into the province of memory."³⁷

While consciousness works its way through the psalm, it is "engaged" in all three parts of the divided present. Conceptualized as such, the aporia of time is not entirely resolved; it just shifted from outside of the human consciousness inwards. The question of being and non-being of time might have lost its immediacy, but the question of its extension only lead to a *distention* of consciousness due to "the noncoincidence of the three modalities of action,"³⁸ also expressed metaphorically by the spatial vocabulary ("looking forward", "looking back", "province of expectation", "province of memory").

Augustine's solution is thus not blunt at all, but entails a shift in the way we relate to time: Rather than merely suffering this impenetrable enigma, it sets the human mind to work. The consequence of this will be laid out as follows.

What is needed at this point of Ricoeur's considerations is a solution for the *distention* that consciousness "suffers" from,³⁹ because the "three modalities of action" are lacking connection – preferably causal connection – with one another. Ricoeur engages in a reinterpretation of Aristotle's *Poetics* to prove his "basic hypothesis that between the activity of narrating a story and the

34 Ibid., 20:26

35 Ricoeur 1984, 17

36 Ibid., 19

37 Saint Augustine, 28:38, square brackets in original

38 Ricoeur 1984, 20

39 Ibid., 22

temporal character of human experience there exists a correlation that is not merely accidental but that presents a transcultural form of necessity."⁴⁰ For this he deconstructs Aristotle's notion of *mythos* into three parts: *mimesis*₁, *mimesis*₂ and *mimesis*₃, which can be mapped onto the parts of the threefold present. *Mimesis*₁ is the symbolic order that surrounds us as culture and which is naturally understood (at least in one's own culture) as "prenarrative experience"⁴¹ or simply "pre-figuration."⁴² It informs narration, in the sense that it provides, or rather imposes, events, which are then made into a fixed story in *mimesis*₂.

By consuming this story, its readers or listeners (i.e. its recipients) reintroduce it back into the cultural sphere in *mimesis*₃. For the effort of this thesis, it is important to note here that the recipient does not merely absorb or copy the information of the story as it is laid out in *mimesis*₂. Rather, "it is the reader who completes the work inasmuch as [...] the written work is a sketch for reading."⁴³ Mimetic action, divided as such into three parts, is necessarily circular because it begins and arrives at the same point, which is the symbolic order of culture. How Ricoeur argues that this circle is not a vicious one (i.e. that engaging in mimetic action is not a zero-sum game) will be shown presently.

Most of the effort in the first volume of *Time and Narrative* is devoted to the mediating function that *mimesis*₂ fulfills between its two adjacent parts. This function is accomplished through *emplotment*. Ricoeur prefers this term to that of *plot* to highlight the "dynamic character of the configurating operation,"⁴⁴ which, one could say, falls in line with the way the human mind is set to work in the face of the threefold present. Emplotment mediates in three ways:

1. It takes the aforementioned events and organizes them into a story, "an intelligible whole, of a sort such that we can always ask what is the 'thought' of this story."⁴⁵
2. It takes the heterogeneous parts of *mimesis*₁ – "agents, goals, means, interactions, circumstances, unexpected results"⁴⁶ – and arranges them into a sequence. Put in another way, it "makes appear within a syntagmatic order all the components *capable of figuring* in the paradigmatic tableau."⁴⁷
3. It reflects the paradox of time by connecting events that would otherwise only belong to an incidental succession into a story, "the unity of a temporal whole."⁴⁸

This last part of the mediation function joins Augustine's *Confessions*, which had nothing to say

40 Ibid., 52

41 Ibid., 227

42 Ibid., 53

43 Ibid., 77

44 Ibid., 65

45 Ibid.

46 Ibid.

47 Ibid., 66, emphasis mine

48 Ibid.

about narrative, to Aristotle's *Poetics*, which do not consider the temporal characteristics of the plot. It is precisely this connection that solves the paradox of temporality, and thus Ricoeur's core argument:

"By mediating between the two poles of event and story, emplotment brings to the paradox a solution that is the poetic act itself. This act, which I just said extracts a figure from a succession, reveals itself to the listener or the reader in the story's capacity to be followed."⁴⁹

The distention of consciousness is thus resolved insofar as events (in time) can be subsumed under one 'point', that of the whole story, yet not resolved insofar as the story's 'point' is only reached by following through its successive events. Each of the story's events can only be evaluated in light of the totality of events, yet their configuration prevents us from viewing them at the same time. This "converts the paradox into a living dialectic."⁵⁰

Returning to the apprehended problem of mimesis' circularity, it can now be said that, because of the dialectical nature of emplotment, mimetic activity does not just return to the same point from which it started. The events of the plot cannot simply be dissolved into the one 'point' of the story, in the same way that its outcome cannot be anticipated at its start. Using Greek tragedies as an example, Ricoeur highlights the "upsetting role of the peripeteia, those contingencies and reversals of fortune" which "[t]he plots themselves *coordinate*."⁵¹ If emplotment was "the simple triumph of 'order',"⁵² it would render the mere notion of peripeteia meaningless, because if one knows the order of things, they will always be able to foresee a change in (the plot's) circumstances. Ricoeur thus prefers to "speak of an endless spiral that would carry the meditation past the same point a number of times, but at different altitudes,"⁵³ rather than a (vicious) circle.

3.2 Narrative as culturally situated meaning making of events

Contrary to Ricoeur's interest in the relation between temporality and narrativity, from which his conception of the three-part mimesis springs, Jerome Bruner approaches the matter from the question of narratives' utility in one's concrete life, and especially in autobiographies. In *Acts of Meaning* he argues against a "fallacy that the human sciences inherited from the nineteenth century", according to which "culture was conceived as an 'overlay' on biologically determined human nature."⁵⁴ This basic assumption caused the field of psychology, at least in the time of Bruner writing *Acts of Meaning*, to generally dismiss culture as a possible explanation for people's actions in life. All that could be measured and discussed was human *behavior*, which had to have its funda-

49 Ibid.

50 Ibid., 67

51 Ibid., 73, emphasis mine

52 Ibid.

53 Ibid., 72

54 Bruner 1990, 20

mental roots in a biological setup, rather than *action*, specifically culturally situated action, to which one could ascribe intentionality in such a way that one could ask for the *meaning* of it.⁵⁵ Conversely, Bruner sees culture as exceeding and even redefining biological constraints of all kinds:

But the devout Jew's commitment to fasting on Yom Kippur or the devout Muslim's commitment to Ramadan is not captured by a recital of the physiology of hunger. And the incest taboo is powerful and directive in a way that gonadotrophins are not."⁵⁶

The decisive turn entailed by this situatedness of humans in symbolic systems is not immediately visible. In a fundamentally and decisively biology-driven system, evolution extradites human beings to behaving according to their genetic markup, which is the only variable capable of change. This change, as we know, happens entirely at random and only shows its effects in the individuals' (and, by extension, the genotypically similar individuals') evolutionary success or failure. As such, evolution is both an undirected and incremental process.

Bruner refers to the turn only indirectly: "The divide in human evolution was crossed when culture became the major factor in giving form to the minds of those living under its sway. A product of history rather than of nature, culture now became the world to which we had to adapt and the tool kit for doing so."⁵⁷ Culture is both the environment *and* the tool kit to which and by which we adapt. This crucial difference to an entirely biology-driven environment opens up opportunities for change, perceptibly and occurring during an individual's lifespan (hence it's belonging to history, not nature). The individual is thus endowed with agency, and only in light of this we can ask about intentionality of their actions in any *meaningful* way.

In order for one to be able to engage in this symbolic system they have to have an operative understanding of it that reflects its twofoldedness and especially its reciprocity. Bruner calls this understanding *folk psychology*: "a set of more or less connected, more or less normative descriptions about how human beings 'tick', what our own and other minds are like, what one can expect situated action to be like, what are possible modes of life, how one commits oneself to them, and so on."⁵⁸ The mechanics of folk psychology are strikingly similar to Ricoeur's threefold mimesis: The human agent has an understanding of the surrounding culture (mimesis₁), engages in it through situated action to which one can ascribe a 'point' or *meaning* (mimesis₂), and (thus) reintroduces it back into culture (mimesis₃). The remaining question of how *narration* could be swapped out for *situated action* in this system will be answered presently.

Before, I want to linger on a question that Ricoeur tacitly omitted. It is about the exact relation

55 Ibid. 19

56 Ibid, 21f.

57 Ibid., 12f. This self-referentiality of culture can be seen as analogous to the circularity of the mimetic activity.

58 Ibid., 35

between mimesis₁, at large, the cultural background noise if you will, and the concrete heterogeneous elements, taken from it at any given instance, to be made into a story (in mimesis₂). When and how are those elements imposed upon us, or does it just happen at random? In the latter case, how could it be plausible that they are 'capable of figuring'? In the role Bruner asserts to narrative, he lays out the pieces for us to construct an answer. He writes that it is the "organizing principle of folk psychology" to be "narrative in nature rather than logical or categorical"⁵⁹ (more on this distinction in section 3.4 Narrative vs. nomological understanding and knowledge retention). However, this principle is only needed to negotiate between states of "canonicity and exceptionality. Thus, while a culture must contain a set of norms, it must also contain a set of interpretive procedures for rendering departures from those norms meaningful in terms of established patterns of belief. [...] Stories achieve their meanings by explicating deviations from the ordinary in a comprehensible form."⁶⁰ The utility of narrative is to provide *meaning* to a situation we encounter that does not fit our conception of what is 'normal'. By implication, it can also be said that if there is nothing to be explained (i.e. everything presents itself to be canonical) in a given situation, it cannot be made into a compelling story. There would be nothing to 'drive' it, and no non-canonical solution. This is why Ricoeur chose the peripeteia of Greek tragedies as his example to demonstrate non-circularity of mimesis.

Bruner describes the manner in which narrative fulfills this function within folk psychology almost perfectly congruent with Ricoeur. This is not surprising, as he makes reference to him, and to Ricoeur making reference to W.B. Gallie in turn.⁶¹ However, this exercise of intersecting Ricoeur and Bruner is by no means superfluous: First, the former identified the aporia of being-in-time as the necessitator for narrative, the latter the situatedness of humans in culture. Second, the previously deferred discussion about the relation between *situated action* and *narrative*, which have been shown to be somehow both central to folk psychology or mimesis respectively, will connect the two even more fundamentally, and provide a better foundation for achieving the effort of this thesis. Of what nature is this connection? Ricoeur already provided a description, but only as a unidirectional one: "If, in fact, human action can be narrated, it is because it is always already articulated by signs, rules, and norms. It is always already symbolically mediated."⁶² Bruner devotes the latter half of *Acts of Meaning* to show that human action is not only symbolically mediated but actually springs from its situatedness within the folk-psychological framework.

He draws insights from a large number of psychological and anthropological studies to make two consecutive arguments. First, he claims that "we come into the world already equipped with a

59 Ibid., 42

60 Ibid., 47

61 Ibid., 44ff.

62 Ricoeur 1984, 57

primitive folk psychology."⁶³ That is to say that even before little children gain the capacity to explain the meaning of social behavior, they have an inherent understanding of it. They can understand others' intentions and their own effect on them and thus guide or misguide others' attention. To provide just one example of an experiment where children had to hide an object,

"even two-to-three-year-olds will withhold relevant information from the searcher, and even create and then supply the searcher with such false information as misleading footprints that lead away from the hidden treasure. The hide-and-see task, the authors [Chandler et. al.] note, 'clearly engaged the subject's own self-interests and ... pitted them against those of another *real* person' and 'allowed them to directly *evidence* in action rather than tell about ... false beliefs of others.'"⁶⁴

As the last two lines illustrate, children of the same age fail to explain the same kind of action, evoked by false beliefs, if they have to give account of it as mere bystanders. Although children (naturally) grow more competent in their use of language over time, they seem to be bound in their development by the capacity to firstly *interact* upon a folk-psychological understanding of others, before being able to give a *narrative* account of it. This does not violate Bruner's aforementioned point that this cultural achievement is more than a mere 'overlay' of biological traits: One cannot "establish any *formal* continuity between an earlier 'preverbal' and a later functionally 'equivalent' linguistic form."⁶⁵ Instead he claims that there must be a "human push", a set of biological predispositions that allow us, within the framework of folk psychology, a "to organize experience narratively."⁶⁶ The manifold ways this organizing activity can take on, however, are also empowered by the child's respective culture.⁶⁷

Bruner goes so far to even claim that the order in which we acquire different narrate skills can be grounded in this 'human push'. He extensively recounts the developmental steps of Emily, subject of the book *Narratives from the Crib*,⁶⁸ who's bed-time soliloquies were recorded for 15 months from her 18th month on, and traces the development of four fundamental narrative traits throughout that phase. This development did not occur in four strictly sequential stages, but rather overlapped as each trait became more fleshed out and thus widened the base for the next one.

The first two, 'agentivity' of action and sequentiality of events and states,⁶⁹ are interlinked. Human action is attributed with specific goals and the effects and outcomes of such actions are organized into a sequential order, which spells out the effects and outcomes of such actions. This is done with increasing accuracy over time: Emily, in narrating the events of the day to herself,

63 Bruner 1990, 73

64 Ibid., 75

65 Ibid, 75f.

66 Ibid., 79

67 Ibid., 80

68 Nelson 1989

69 Bruner 1990, 77

initially made "use of simple conjunctions, moved then to reliance upon temporals like *and then*, and passed finally to the use of causals like her ubiquitous *because*."⁷⁰ This is to say that she became increasingly proficient in pointing out the syntagmatic order of her stories' elements.

Thirdly, Emily internalized the concept of aforementioned canonicity, and used it through words such as "sometimes" and "always", deontic qualifiers like "got to have", and regular, ritual events like "Sunday mornings."⁷¹ She used the canonical to assert regularity and order of things to herself, and to explicate non-canonical events where she could.

Lastly, Emily used her own personal perspective, i.e. gave a narrating 'voice' to her accounts. She did this either by "expressing her feelings" or by giving an "epistemic perspective"⁷² when she was unsure about reasons for certain events or when she wanted to mark situations in the world as unclear.

Bruner interprets these deliberate efforts as her attempt to "organize her experience of human interactions in a lifelike, storylike way."⁷³ Emily corrected herself early on when she did not get the order of events right, put vocal emphasis on certain events that interested her especially, and tried overall to keep the narrative coherent, but predominantly in terms of her expectations and the regularity of events, and less so in terms of logical consistency.

Bruner calls these four traits the grammatical constituents of narration: agentivity, sequentiality, canonicity, and perspectivity. They work together to ultimately align one's own as well as others' actions and their perceived meanings with what is taken as culturally acceptable, or 'normal'. Almost as if contingencies in behavior were an insufferable, because threatening, violation of the orderliness of the world, the function of narrative lies in "explicating the mitigating circumstances surrounding conflict-threatening breaches" not only in the respective story, but in life at large.⁷⁴ This can take place on a personal level, as described in Emily's case, or on an interpersonal level, when "one must make one's actions seem an extension of the canonical" through rhetorical ruses,⁷⁵ for instance when trying to convince or appease others. More importantly though, Bruner attributes a peacekeeping function on a cultural level to narratives, which stems from the capacity "not to reconcile, not to legitimize, not even to excuse, but rather to explicate"⁷⁶ non-canonical behavior. Cultural coherence, but not necessarily consistency, is thus maintained by a set of shared and sufficiently acceptable stories. To finally close the circle of his argumentation, Bruner repeatedly suggests that narrative capacity is a product of our evolutionary past and points to similar,

70 Ibid., 90

71 Ibid., 91

72 Ibid., 91f.

73 Ibid., 93f.

74 Ibid., 95

75 Ibid., 87

76 Ibid., 95

albeit not as highly developed, traits in other high primates.

To conclude: Whichever stance one takes, narrative seems to be deeply engrained in human consciousness, not just because of nurture, i.e. culture, but nature as well. Ricoeur and Bruner agree on the form that narrative takes. It is that of sequentialized events, situated spatially, temporally and culturally, performed with certain intentions by actors.

3.3 The epistemology of narratives

Up to this point, the question of whether and how these concepts of narrativity can be related to historiography have been largely absent from this thesis. Although his chief interest in *Acts of Meaning* lies elsewhere, Bruner is aware of the conceptual gap in which "the critical intersection where *verifiability* and *verisimilitude*" come together, and points out that it is not yet solved in the field of psychology: "The next big advances in our understanding of language acquisition will probably be achieved when that dark subject is enlightened by developmental research."⁷⁷

For the time being, Ricoeur's considerations will have to suffice, although it can be said that Bruner's findings are congruent with his argumentation. Ricoeur's next step is to dismantle a significant, because (at least in occidental societies) ubiquitous, conception that goes back to Aristotle. It says that

1. narrative belongs to the realm of fiction alone, while
2. historiography concerns itself with truth claims, not unlike natural sciences.

Aristotle explicitly excluded *historia* from *muthos*, since what Ricoeur calls emplotment could, in his view, never grasp together the events of history, because "the real, unlike the possible which the poet conceives, and which the peripeteia illustrate, implies a contingency that escapes the poet's control."⁷⁸ Historical events thus resist to being subsumed under the one 'thought' of a story, and aligning the temporal with the causal, as in the equation of "one after the other" and "one because of the other", which is so central to Ricoeur's emplotment, is not applicable to historical events. With the same stroke, this way of explaining how past events unfolded in the way they did is dismissed as unscientific; even if emplotment could be applied here, the kind of understanding of history it provided would fall short of historians' scientific ambition.

To tackle this, Ricoeur lines up arguments that concern the notion of historical understanding, taken from a number of scholars (William H. Dray, Arthur C. Danto, W. B. Gallie, Louis O. Mink), and joins them together to argue against the aforementioned conception. From Dray he borrows the criticism of the *covering law* model. In short, this model represents the attempt to find equivalents for laws as they exist in the natural sciences, where, if one can say "X causes Y", one should

⁷⁷ Ibid., 94

⁷⁸ Ricoeur 1984., 162

also be able to say "if X, then Y."⁷⁹ Setting aside the obvious question of whether this can be achieved, Ricoeur argues that other modes of explanation exist and are accepted in sciences such as "cosmology, geology, and biology," which "do not authorize prediction, but rather retrodiction,"⁸⁰ such as that if Y is the case, one can say that X must have had occurred.

The implication of this mode of explanation can be illustrated with a simple sentence: "In 1717, the author of *Rameau's Nephew* was born."⁸¹ Not only does it make tacit reference to Diderot by mentioning his book, it (more importantly) describes and gives meaning to the year 1717 "in light of subsequent events,"⁸² i.e. his birth and his becoming a known author. The year's (or, for that matter, Diderot's birth's) significance is not inherent in these events per se, because the course of subsequent events could have been different. Rather, the author of this sentence chose to link these events in such a way precisely to establish a causal relationship between them, notwithstanding there being an arbitrary number of other possible linkages.

To argue – and this is arguably his most crucial epistemological stance – that this contingent character in the activity of 'grasping together' the events into a conclusion is somehow less acceptable than the nomological character of finding conclusions in natural sciences is invalid to Ricoeur: "Contingency is unacceptable only to a mind that attaches the idea of mastery to that of understanding."⁸³

In fact, it is exactly that capacity of emplotment to show how contingent events lead up to a certain conclusion that makes it most fitting as a (the?) format for historiographical inquiry. In the same way one cannot predict the conclusion of a narrative, we cannot predict the development of a historical situation, no matter how carefully we assess it. "Rather than being predictable, a narrative's conclusion has to be *acceptable*. Looking back from the conclusion toward the intermediary episodes, we must be able to say that this end demanded those events and that chain of actions."⁸⁴ Peripeteia, around which mimesis₂ revolves, is present in historical narratives as well, and thus the activity of emplotment still necessary.

However, according to Aristotle, what is acceptable is entirely subjective, and Ricoeur does not object to this. Moreover, from this follows that for the capacity of a story to be followed (all in the context of the *Poetics*), "[w]hat is impossible yet probable should be preferred to that which is possible but incredible."⁸⁵ With Bruner we can say that this is due to folk psychology, which

79 Ibid., 126, emphasis mine

80 Ibid., 135

81 Ibid., 146

82 Ibid.

83 Ibid., 150

84 Ibid.

85 Aristotle, *Poetics*, 60a26-27

"focuses upon the expectable" and "endows [it] with legitimacy or authority."⁸⁶

The problem here is obvious: what Aristotle requires of emplotment is diametrically opposed to one of the pillars of historiography, namely the *truth claim* (cf. the aforementioned Clyde et. al.). A historical narrative can never abide by Aristotle, yet it requires 'followability' in spite of incredibility lurking at every turn the would-be story decides to take. How can this be resolved?

Ricoeur borrows from Gallie to show that, in the context of narratives at large, it is entirely normal to employ explanations to tie contingent events together:

"The 'one because of the other' is not always easy to extract from the 'one after the other.' Consequently, our most elementary narrative understanding already confronts our expectations governed by our interests and our sympathies with reasons that, to fulfill their meaning, have to correct our prejudices. In this way, *critical discontinuity* is even incorporated into *narrative continuity*."⁸⁷

Incorporated, yes, but only with an "ancillary" function.⁸⁸ Narrative needs explanation only in the face of discontinuities, i.e. to be kept "on the trail."⁸⁹

Bruner detects the same "puzzle-solving" approach when Emily is confronted with discontinuities in her life. He then defines two genres of narration: the first – confusingly named – is narrative, used per default as long as continuity is given. The second mode is "the logical or paradigmatic, brought to bear on the task of explicating the breach in the narrative."⁹⁰ Emily became increasingly good at interdigitating these two, but they never fused, exactly because the latter is only ancillary.

But where a poet, as mentioned earlier, has entire control over the events, and can thus legitimately give preference to the probable but impossible over the incredible but possible, a historian does and can not. Historical narratives will thus always require explanations if they are to be followed.

It is important at this point to mention the caveat that explaining discontinuities in historical narratives entails: critical inquiry does not hold an *inherent* spot in this otherwise so coherent framework, because followability relies only on the 'coherent' quality of the explanations, whether they are true or not.⁹¹ This might even be seen as a (if not the) reason for the discomfort that this

86 Bruner 1990, 47

87 Ricoeur 1984, 152, emphasis mine

88 Ibid., 154

89 Ibid., 155

90 Bruner 1990, 93f

91 Another question that might be interesting in the context of narratology, but not necessarily historiography, is how our evaluation of this coherence is shaped, especially by culture. The motives of characters, as well as the explanations offered for unforeseen events in narratives from outside of one's own cultural background are sometimes quite hard to understand (read: accept), be it the sagas of Icelanders or contemporary Korean films. Explanations in the context of historical writing should, naturally, take those cultural differences into account, which does not mean that their scientific character should be diluted by cultural relativism.

narrative mode of history provokes. If, in the activity of emplotment, there is always a proclivity to slip in the probable but impossible explanation, because it might resolve the discontinuities more elegantly than the scientific, but laborious, historical reasoning, then this construct Ricoeur puts forth is indeed a fragile one.

I had written in 1 Introduction about Ephesus that it seemed to invite the mind to conjure up its own ideas and stories, only to graft them onto the physical substrate of that site. Those stories, however, can by no means be called history, and might not even be connected to the (presented) past in a meaningful way. The problem for historical storytelling is actually that Ephesus provides a lot to work with, in such a way that one can easily impose a modern view of what life in an ancient Roman city was like. If the nascent stories in the visitor's mind require explanations, they can easily be picked from any kind of fiction or pop culture, and also arbitrarily connect the physical pieces of the past. The probable but impossible (the verisimilar) has a strong advantage over the incredible but possible (the verifiable and veracious) in contexts like this.

Do those explanations that are in fact preserving verifiability and veracity match the *constructivist* approach of "analysing how and what individual pieces of evidence can do" to form "evidence relationships", as Clyde et. al. put it?⁹² According to Ricoeur they do, as long as it is done in the form of a narrative. Clyde et. al. somewhat deviate from this by suggesting that there is a conceptual gap between explaining and narrating, one that opens up space for the "move from a basic discussion of epistemology to one of [the] practice" of writing history.⁹³ This can be understood as a dichotomy in historiography between the activities of forming an understanding of history (Clyde et. al. repeatedly use the vocabulary of creating/establishing "truth claims and theories" about the past⁹⁴) and having those, in a second step, "communicated through a narrative."⁹⁵ Those activities are, I would say, regarded by Ricoeur as interdependent parts of mimesis₂: "Every story, we have said, in principle explains itself. In other words, narrative answers the question 'Why?' at the same time that it answers the question 'What?' To tell what has happened is to tell why it happened."⁹⁶

Similarly, as Bruner described in his account of Emily's soliloquies, the element of narrative that allowed her to make truth claims was that in which she expressed her own perspective on the narrated events. Thus, the narrative "cannot, in the jargon of narratology, be 'voiceless'"⁹⁷ and the truth claims will always be understood as integral parts of the story. Clyde et. al. cannot effectively separate (their) perspective from the narrative as a whole.

92 Clyde et. al. 2012, 7

93 Ibid., 9

94 Ibid., 6, 7;

95 Ibid., 9

96 Ricoeur 1984, 152

97 Bruner 1990, 77

What is more, they locate a past "that can be known in a multitude of ways"⁹⁸ in the *deconstructionist* approach to historical writing, which, in turn, leads to two possible inferences about their notion of narrative in the *constructivist* approach:

1. As a string of events that should only be subsumed under one correct 'thought' of a story, i.e. with one set of explanations, or
2. as the notion that each individual event must be exclusive to one story, which would entail that different narratives could never touch upon (i.e. share) the same events.

If either, but especially the latter, is the case, then what Clyde et. al. seek in their paper comes dangerously close to the assumption of the *covering law* model: rather than seeking a critically justifiable 'path' that leads backwards through time to explain how the events came about as they did, they would look for a more, or even the solely acceptable of all the conceivable paths. If there were such a path, would that not require the notion of an epistemology which allowed to deem one historical narrative more appropriate than another, outside of a case-by-case analysis? And would that, in turn, not entail that, once a recipient recognizes the regularity of a narrative (the trope, as it were), could they not anticipate the further progress of that narrative? This would certainly erase all peripeteia, which is, as Ricoeur showed, essential to the recipients' willingness to follow any story.

A practical example should serve as a counter argument: In the German Emigration Center the life stories of all the emigrants are 'bundled together' once each of them entered the ship to the New World. It is convenient for this museum to focus on that particular part of their journey, because all of them had to partake in it in one way or another. There are commonalities and dissimilarities in the those lives' stories, and those can be joined or contrasted to offer different perspectives on the history of emigration to the New World. Some are certainly less representative of that archetypal history than others, but that does not make them 'wrong' or less accurate per se. There is in fact some regularity in the presented stories, but they are by no means perfectly congruent. As has been said, the German Emigration Center highlights this very incongruence between the stories by assigning another emigrant's story to the admission ticket (iCard) at each visit, so that every time the same archetypal history can be told, but from a slightly different perspective. This increases the likelihood for the visitor to visit the museum again and to be willing to follow the same story again, because it is not actually the same story every time.

To deepen this regress even further, I want to connect Ricoeur's criticism of the *covering law* model to his assertion that the activity of *mimesis*₂ is circular but non-vicious, which is in turn verifiable by the presence of peripeteia in the respective narrative:

98 Clyde et. al. 2012, 9

If one could indeed apply the covering law model and thus 'master' the understanding of a given (therefore: also the present) historical situation, we would be able to derive a proper way to react to every question that the run of events in our lives imposed on us, at least as long as we had sufficient knowledge of the same kinds of events, be they described by somebody else or experienced by us earlier. This would correspond to the dismissed notion of a vicious circle (i.e. one that returns to the point it started from) in narrative, where one can anticipate the outcome of a narrative right at the start. Thus nothing could perceivably change in the course of history, as long as the actors were not oblivious to the presumed covering laws, just like no interesting outcome could be produced in a game of tic-tac-toe that is being played by non-novice players. From mere observation we can say that history changes, and that the future is indeed unknowable, so the thesis of there being even the possibility of a covering law is currently unsupported.

For the effort of this thesis, this entails:

1. We are left with the narrative-based epistemology of history, as laid out by Ricoeur and Bruner.
2. The methodology through which the scientific character of the explanations in nonlinear interactive narratives is ensured must be well defined, so that the *truth claim* can be upheld.

To present alternatives to the aforementioned *covering law* model, Ricoeur borrows two compatible modes of explanation from Dray.

The first, named *causal analysis*, can be illustrated by going back to the example of "X causes Y". It is used to verify whether X can be regarded as a cause for Y, i.e. whether the explanation of any contingency in a historical narrative is also legitimate in an epistemological sense. This test consists of two parts: "The first is an *inductive* one. The factor in question must be a really necessary one. The second is a *pragmatic* test. There must be a reason for selecting the condition in question from among the conditions that as a whole constitute the sufficient condition for the phenomenon."⁹⁹ For a candidate to be "really necessary" one must be able to say that if X had not occurred, Y could not have occurred (in the same fashion) either. The inductive test is thus a *negative* one, "eliminating from the list of candidates for the role of cause those factors whose absence would not have changed the course of events."¹⁰⁰ For causal analysis to provide a *positive* explanation, historians have to continue "filling in the gaps"¹⁰¹ in order to be able to "defend their conclusions against adversaries who would refer to another set of factors to uphold their own

99 Ibid., 126

100 Ibid.

101 Ibid.

thesis"¹⁰² about the reasons *Y* came about as it did. Of course, each *X* in this set of presumed reasons for *Y* will still have to pass the inductive test. As there is no law from which one could *deduce* whether a set of factors could be deemed a sufficient explanation, historians have to make judgments, very much in the legal sense of the word, by "gathering together scattered factors and weighing their respective importance in producing the final result."¹⁰³ Ricoeur concedes that the distinction between (nomological) sciences and commonsense explanations is being blurred here, which, in the absence of covering laws, is only consequential.

The second proposed mode is *rational explanation*. In contrast to causal analysis, it is only applicable to the actions of individuals rather than historical situations at large. Outside of an "understanding through empathy, projection, or identification", "we must inductively gather the evidence that allows us to evaluate the problem as the agent saw it."¹⁰⁴ Their actions have to be understandable in their respective context. If the latter does not provide a convincing explanation, all the historian can do is to work with the documents to reestablish it. A wager for a good explanation reads like this: "If *y* is a good reason for *A* to do *x*, then *y* would be a good reason for anyone sufficiently like *A* to do *x* under sufficiently similar circumstances."¹⁰⁵ Bruner describes the same kind of activity even for everyday settings:

"In contrast, when you encounter an exception to the ordinary, and ask somebody what is happening, the person you ask will virtually always tell a story that contains reasons [...]. If somebody comes into the post office, unfurls the Stars and Stripes, and commences to wave it, your folk-psychological interlocutor will tell you, in response to your puzzled question, that today is probably some national holiday that he himself had forgotten, that the local American Legion Post may be having a fundraiser, or even simply that the man with the flag is some kind of nationalistic nut whose imagination has been touched by something in this morning's tabloid."¹⁰⁶

This kind of explanation is quite obviously located even further from the nomological sciences in terms of the rigidity of its truth claim. "In this regard, history does nothing different from what philology or textual criticism does. When the reading of some received text or interpretation appears to be discordant in relation to other accepted facts, the philologist or textual critic rearranges the details to make everything intelligible again."¹⁰⁷

Everyone with a folk-psychological understanding of the world will employ this mode of explanation. The power attributed to such an explanation will hinge on the knowledge about what it means to be 'like *A*' under the given 'circumstances'. In the excavation site of Troy there is very little to work with in these terms, which either will leave the visitor clueless or set their unbridled

102 Ibid., 125

103 Ibid.

104 Ibid., 129

105 Dray 1957, 132

106 Bruner 1990, 49

107 Ricoeur 1984, 155

imagination to work, while in Ephesus the possible problem lies in offering too much sensory input to the visitor, without enough interpretative guidance and without distinguishing the authentic remains from the reconstructed ones. The historical explanations that any non-scholarly visitor of such a site might invoke must be fraught with uncertainty.

Interestingly, Ricoeur explicitly orders the modes of explanation in terms of their explanatory power, from general to particular: "Hence the range must be left open from explanation by laws, to singular causal explanation, to judgment procedures, ... to rational explanation."¹⁰⁸ Bruner does not use the term 'nomology' himself, but defines the aforementioned 'logical or paradigmatic mode' of explanation at greater length in *Actual Minds, Possible Worlds*, four years before publishing *Acts of Meaning*: This mode "attempts to fulfill the ideal of a formal, mathematical system of description and explanation. It employs categorization or conceptualization and the operations by which categories are established, instantiated, idealized, and related to one another to form a system."¹⁰⁹ Jonathan Adler, in his reading of Bruner, therefore concludes that the "paradigmatic mode offers the power of prediction in that it sets up and tests hypotheses about the nature of reality,"¹¹⁰ which is congruent with Ricoeur's use of the word 'nomological'.

3.4 Narrative vs. nomological understanding and knowledge retention

As has been laid out, narrative is both a powerful and, at least to some extent, innate human way to order events in the world around us and make them comprehensible. The epistemological relation between historiography and its subject, namely the past, has been discussed, with the – to some maybe disillusioning – conclusion that a nomological approach to explaining the past cannot be achieved, and that we have to make do with the less rigorous tools in the just mentioned 'range' of possible modes of explanation. The coupling of narrative, with its all too human folk-psychological baggage on one side which prefers the canonical and verisimilar, and scholarly demands that require the veracious and verifiable on the other, is indeed quite an odd, but necessary compromise.

As already alluded to in the previous section, the narrative 'push', in its reciprocal relation to the symbolic order of culture, forms a means of understanding that is a fundamental constant which not only cannot be escaped by historiography, but that is constitutive of the human condition. It is "already 'there,' deeply entrenched in culture and language."¹¹¹ To reiterate my point from the introduction, I see this already as a good enough reason to use narrative to mediate

¹⁰⁸ Ibid., 127, ellipsis in source

¹⁰⁹ Bruner 1986, 12

¹¹⁰ Adler 2008, 423

¹¹¹ Bruner 1990, 11

(interpretations of) the past.

However, before discussing the more practical aspects of this mediation, there is one more point to be made on behalf of narrative. This one is not epistemological but pragmatic, because it concerns the dissemination rather than the creation of knowledge. It says that, aside from being inescapable, narrative can also be a more effective tool for creating understanding than ontological statements.

While laying out his four fundamental narrative traits, Bruner noted only in passing that "logical propositions are most easily comprehended by the child when they are imbedded in an ongoing story."¹¹² Of course, our capacity to understand those logical propositions does not stop at the narrative level, because our culturally acquired capacities of understanding do not require a formal continuity from our biological predispositions. However, it is evident that we are nevertheless prone to let narrative thinking override probabilistic thinking. Michael Shermer calls this trait – quite conveniently, but with no apparent reference to Bruner – *folk numeracy*: "our natural tendency to misperceive and miscalculate probabilities, to think anecdotally instead of statistically, and to focus on and remember short-term trends and small-number runs."

There are several aspects to folk numeracy. First, humans focus on the recent and exceptional rather than on the long-term and steady: "We notice a short stretch of cool days and ignore the long-term global-warming trend. We note with consternation the recent downturn in the housing and stock markets, forgetting the half-century upward-pointing trend line."¹¹³ Second, we perceive (seemingly statistically relevant) patterns in phenomena when there are none. Gamblers with a lucky streak are an example of this. They "notoriously employ both the 'hot streak fallacy' and the 'dueness fallacy'", although "the roulette wheel has no memory", i.e. is not more likely to yield one number or color over another based on previous turns.¹¹⁴ Third, and partly resting on the first two aspects, confirmation bias lets us highlight "astonishing coincidences and forget the vast sea of meaningless data"¹¹⁵ when the latter contradict already held beliefs.

This culminates in a sort of working understanding of the world that stems from anecdotes and that can easily override knowledge and understanding of statistical data. Similarly to Bruner, Shermer holds our "evolved brains that pay attention to anecdotes"¹¹⁶ accountable for this.

To illustrate the effect of folk numeracy, a more extensive example will have to be laid out. It is an instance of the base-rate fallacy which leads people "to make judgments of probability based entirely upon specific information, leaving out the [statistical] base rate," even if the latter starkly

112 Ibid, 80

113 Shermer 2008c

114 Shermer 2008b

115 Shermer 2008b

116 Shermer 2008a

contradicts the former.¹¹⁷ Daniel Kahneman reiterates three consecutive psychological studies:

The first, conducted by John Darley and Bibb Latane, has since become renowned as the "helping experiment": Participants in groups of six were asked to speak in turn, anonymously over an intercom, about their lives and problems. One of those participants was a stooge who always took the first turn and mentioned in his scripted speech that he was prone to seizures. When it was his turn again after everybody else in the group had spoken once, he "became agitated and incoherent, said he felt a seizure coming on, and asked for someone to help him"¹¹⁸ and made choking noises before his microphone was cut off and automatically turned to the next participant. Out of a total of 15 participants only four responded immediately to the appeal for help, five more came out of their booths "only well after the 'seizure victim' apparently choked"¹¹⁹ and the remaining six did not leave their booths at all. This behavior, in which personal responsibility is diffused among several persons, is known as the bystander effect.¹²⁰

In the second study, conducted by Richard Nisbett and Eugene Borgida, another set of participants was shown "videos of brief interviews allegedly conducted with two people" who had participated in the first study. The interviews were deliberately kept short, bland and uninformative, so that the participants could not conclude much about the interviewees likelihood to help the stooge from the first study.¹²¹ One half of the participants (of the second study) was told about the procedure of the "helping experiment," the other half about about the procedure as well as the (surprising) results. They were then asked to guess the likelihood of the two interviewees to help the seizure victim. While it was expectable that the first half would predict both interviewees to help, based on their general assumptions about human nature and behavior, the second half should be expected to base their predictions on the base rate of 4 out of 15, or 27%, since they could not infer anything (contrary) from the interviews. However, the predictions of both groups were indistinguishable.¹²² Nisbett and Borgida concluded that their students "quietly exempt"¹²³ the *particular* cases they were shown from the *general* rule of the statistics (which they knew).

The inverse method had a profoundly different effect: In a third study, Nisbett and Borgida taught a new set of participants about the procedure of the first study and showed them the interviews, but did not mention the study's outcome. Instead, they told them that the two alleged participants "had not helped the stranger, then asked them to guess the global results. The out-

117 Curtis 2014

118 Kahneman 2011, 171

119 Ibid.

120 A sample size of only 15 is admittedly small, but Kahneman's point lies in the reaction (i.e. the learning outcomes) of the participants of the second and third studies to the results of the first. The results of the "helping experiment" itself have been confirmed many times and correlations between other factors and the likelihood to help have been found, most notably that of group size (c.f. Darley and Latane, 1968).

121 Ibid., 172

122 Ibid., 173

123 Ibid.

come was dramatic: the students' guesses were extremely accurate."¹²⁴

This demonstrates a telling dichotomy between the participants' 'intellectual' understanding of the statistical data and their capacity or willingness to actually incorporate this knowledge when assessing a social situation. Kahneman's conclusion could just as well be found in Bruner's *Acts of Meaning*: "[S]urprising individual cases have a powerful impact [...] because the incongruity must be resolved and embedded in a causal *story*."¹²⁵ Granted, those psychological studies are quite different from the historiological 'after-the-fact reasoning' that Ricoeur defends, exactly because they are repeatable and controllable studies: "The symmetry between explanation and prediction, characteristic of the nomological sciences, is broken at the very level of historical statements."¹²⁶ My point is not to weaken the explanatory power of those studies in particular or the scientific method in general, or reduce them relative to the level of the aforementioned modes of explanation that are employed in historiography. Rather, the insight here is that *even* in the nomological sciences it is apparently more effective to teach about their findings by 'wrapping' them in narratives. In historiography the very activity of knowledge creation is the same as knowledge presentation. Its epistemology is reflected in its means of conveyance and vice versa. The same congruence cannot be claimed for nomological sciences – but that the 'weak' narrative proves more effective even to convey those intrinsically 'stronger' findings from nomological sciences shows how our brains are "belief engines that employ association learning to seek and find patterns"¹²⁷ and pay attention to narratives first and foremost.

Real-world examples, both for the better and the worse, are abundant. Charities are now being advised to "keep the message centered around human beings,"¹²⁸ as opposed to a "larger, unnamed or statistical group of people."¹²⁹ A 2007 study by Small et. al. found that presenting an 'identifiable victim' of famine is a much more effective way to raise money than presenting statistics about a large number of people in the same situation as that one victim: People "pay greater attention and have stronger emotional reactions to vivid rather than pallid information."¹³⁰ Moreover, even when presented with both the statistical data and the identifiable victim's story, donations declined relative to the cases where only the victim was presented.

Similarly, stories with little or no scientific evidence can still catch on if they seem plausible and are crafted in an appealing way. One example is the spread of a rumor that links the increased rate of the birth defect microcephaly in South America to a larvicide allegedly produced by Mon-

124 Ibid., 173

125 Ibid., 174, emphasis mine

126 Ricoeur 1984, 147

127 Shermer 2008a

128 Yeoh 2014

129 Chung n.d.

130 Small et. al. 2007

santo. One article¹³¹ published in Tech Times cites an Argentinian doctors' group that claims that areas where the larvicide Pyriproxyfen was used showed a sharp increase of cases of microcephaly, despite it not being "clear that such a geographical connection exists," and "despite a near-universal consensus among scientists and health officials that the cause is almost certainly the mosquito-borne Zika virus."¹³² Furthermore, that larvicide is actually produced not by Monsanto but a company called Sumitomo, and had been "approved and registered for use in the past 20 years by the authorities of around 40 countries around the world."¹³³ This company is in fact only associated with Monsanto, and not its subsidiary, as the Tech Times article claimed. In conclusion, it can be said that every detail of this story is either untrue or lacks evidence, but the connection between a widely vilified company such as Monsanto, allegedly causing birth defects in children, is more appealing (i.e., with Aristotle, more probable) than a more complex explanation without such an identifiable agent. Although the story was corrected in February 2016, only days after it was first published, it is still being heavily shared on social media platforms.¹³⁴ From this proclivity one could even deduce an imperative for conveying an interpretation of the past that is preemptive of (the most) common misconceptions about a given historical situation. In the case of Troy and especially Ephesus this means that it is *also* the historian-storyteller's responsibility to counter preconceived but misleading impressions from popular culture of 'what life was like' in the Roman or Greek era.

Employing narratives can even be opportune to convey one's findings to other scientists (rather than the public at large) when those findings are not as simple and elegant as expected, e.g. when "the equation is messy, the molecule looks like an odd clump of pasta, and the mechanism has at least 17 steps" as Hoffmann puts it.¹³⁵ He gives this example where such a result is 'unpleasing', hence its coming about requiring explanation, apparently much in the same way of Bruner's 'explicating of deviations'. When such a task is at hand, the scientist's role is split into two, which he calls the 'scrabblers' and the 'writers':

"The first is the scientist trying to understand; in his or her mind is a congeries of what teachers taught, what is known. He or she concocts fecund stories of what might be and calls them hypotheses. [...] The writer sanitizes, gives the best yield of a reaction, the most plausible story, as mathematically or logically dressed up as possible."¹³⁶

Using Ricoeur's framework, this can be interpreted as the scientist first trying to gather together the heterogeneous elements of mimesis₁ and then arranging them into a story (mimesis₂), to

131 Navarro 2016

132 Mitchell 2106

133 Sumitomo Chemical 2016

134 cf. <https://www.facebook.com/search/top?q=monsanto%20zika> and <https://twitter.com/search?q=monsanto%20zika&src=tyah>

135 Hoffmann 2014, 250

136 Ibid., ellipsis in original

finally present them to the scientific community (mimesis₃). The obvious difference to a 'pure' narrating exercise, with elements taken from cultural prefiguration, is that the would-be narrative elements are also 'created' by the scientist and tested against reality. This fact-producing activity in itself is foreign to the narrative framework.¹³⁷ However, "facts are mute. One needs to situate the facts, or [...] weave them into nothing else but a narrative."¹³⁸

4 Structure, conveyance and reception of medial information

As both structure and interpretation of narrative are so vital to this thesis' effort, I will have to explore the means of structuring and conveying that narrative to an audience. In what way should a narrative be presented to the narratee to convey a sound historical interpretation? From a historiographical point of view one might choose one of two fundamentally different approaches: The presentation should either always accommodate the 'critical inquiry' that Ricoeur saw in historiography when ordering the 'heterogeneous elements' of a story into a coherent narrative string, or afford no meaningful, i.e. no non-arbitrary interpretation of the past at all.

This latter approach falls well into the category of deconstructionism as described in chapter 3.3 The epistemology of narratives. As has been shown in the last two sections, it would be exceptionally hard to accomplish, and only at the cost of foregoing the fundamentally human and (therefore potentially) engaging mode of making sense of the past through narratives altogether. The former approach might be located in the category of constructionism, but only insofar as the critical inquiry of assessing "what individual pieces of evidence can do,"¹³⁹ which Clyde et. al. decisively declared the exclusive domain of the scholar, can be shifted (at least partly) to the narratee. As discussed in the previous section, it is just as important for educational purposes, i.e. for non-superficial understanding and knowledge retention, to also convey narratives in an engaging way that takes folk psychology and folk numeracy into account.

The challenge in conveying historical interpretation (at least to a non-scholarly audience) is thus to not let veracious conclusions fall at the expense of the engaging quality and recipitatory freedom for the narratees. To discuss possible strategies to manage, if not resolve the tension

137 The thus described relation between nomological science and narrative can even be everted with regard to the moment of nomological hypothesis creation: "We all know by now that many scientific and mathematical hypotheses start their lives as little stories or metaphors, but they reach their scientific maturity by a process of conversion into verifiability, format or empirical, and their power at maturity does not rest upon their dramatic origins. Hypothesis creation (in contrast to hypothesis testing) remains a tantalizing mystery – so much so that sober philosophers of science, like Karl Popper, characterize science as consisting principally of the falsification of hypotheses, no matter the source whence the hypothesis has come." (Bruner 1984, 12)

138 Hoffmann 2014. 250

139 Clyde et. al. 2012, 7

between those poles, I will look at the impact that differently structured and medially conveyed narratives have on their receivers. I will draw upon insights from literature-, media-, and game studies, linguistics, and cognitive science to lay out how the human mind and different medial configurations structure the perception of media in general and narratives in particular. Those findings will then be linked back to Ricoeur and Bruner to formulate a set of claims about the conveyance of historical narratives in different medial configurations.

When one attempts to convey any narrative to an audience, it has to be done through some medium. To illustrate what challenge this imposes on the would-be narrator, let me first present Espen Aarseth's deconstruction of the term 'text'. In his essay "Nonlinearity and Literary Theory," he drafts an ontology for a large variety of such texts. There are two separate, but as we will see, deeply interrelated perspectives on the notion of a 'text': The *informative* aspect describes the physical object that makes up or carries the text, and the attached social codes which define *how* it should be read in terms of codices of use, while the *interpretable* aspect defines *what* the individual reader takes out of it, "that which makes it worth reading."¹⁴⁰ From a historical rather than terminological viewpoint, he then identifies three conceptions of a "proper text", which are commonly shared by literature theorists as well as readers:

"(1) A text is what you read, the words and phrases that you see before your eyes and the meanings they produce in your head. (2) A text is a message, imbued with the values and intentions of a specific writer/genre/culture. (3) A text is a fixed sequence of constituents (beginning, middle, end) that cannot change, although its interpretations might."¹⁴¹

These attributes require the existence of a narrator, who designed the *informative* aspect prior to the consumption by the narratee, who is in turn only to interpret the text. Removing, adding or rearranging the pieces of such a text would violate this precept, which reveals the notion of a "text 'behind-the-text' as more real than the physical object".¹⁴² The author is considered to be the only one who can shape this ideal text in a way that is suitable to facilitate a meaningful interpretation.

This kind of text "is the only text in which the metaphysics of a real reader has any credibility and the only text in which the reader can exist as a reducible, accountable figure."¹⁴³ There is a clear distinction and hierarchic relationship between reader and author. The latter is also the narrator, in possession of the proper text 'behind-the-text' and has laid it out in the specific and only way in which it is meant to be consumed by the reader, who, being the narratee, can rest assured that the plot is told exactly in the way it is meant to be told. In effect, a 'proper text' is a rather

140 Aarseth 2003, 763

141 Ibid.

142 Ibid., 768

143 Ibid., 770

rigid version of the informative aspect, one which safely "conducts the script from the text to the mind of the beholder."¹⁴⁴

As nonlinear texts do not match this notion of a fixed informative, Aarseth proposes that "we should study *text as information*."¹⁴⁵ This might be the widest imaginable definition of text, but "it might give us a more stable object to work with in a time when our old paper-based paradigms seem to disperse on the winds of the rhetoric of the new technologies."¹⁴⁶

Where Ricoeur and Bruner are interested in the 'heterogeneous elements' of the *interpretable* aspect, Aarseth's focus lies primarily on the effect that different (structural) conditions of the *informative* aspect can have on the *interpretable*. These aspects are, quite obviously, interdependent: In a hypertext with links between different chunks of text (read: of the informative), the *interpretable* will change depending on the link the user chooses to follow. The inverse scenario, in which the *interpretable* interferes with the *informative*, might not be as plausible, but certainly imaginable, for instance in a text that orders "us to go at once to page 50 for further instructions and skip the intervening pages that, we are told, have been contaminated by subversive directions."¹⁴⁷

Due to this interrelatedness, an understanding of the properties and effects of the informative is necessary to effectively 'conduct' a given historical interpretable to any text's recipients. This should hold true for any interpretable, but especially so for the, from a historiological perspective, largely uncharted territory such as interactive narrative and narrative with respect to new media.

4.1 Points of connection between historiography, media, and textual ontology

Before coming to Aarseth's ontology and enumerating some more prototypical examples of varying degrees of nonlinearity, there are (at least) three concerns about using his framework as the foundation for this thesis' discussion of the structural properties of historical narratives that I would like to clear.

First, the relation between Aarseth's notion of informative and the shape which Ricoeur's heterogeneous parts of mimesis₁ take on through emplotment, or in Bruner's terms respectively, the shape of events and explications of deviations in the context of the symbolic order of culture, might not be self-evident. As has been said, Bruner and Ricoeur are only really interested in the interpretable, and can afford to be largely agnostic about its carrier. Mimesis₁, or the symbolic

144 Ibid., 763

145 Ibid., 766, emphasis mine

146 Ibid., 766

147 Ibid., 764

order of culture, are obviously medium-independent. Culture itself cannot be reduced to, for instance, only its literature, only its music, or only its customs, but is being carried by and dispersed across all imaginable kinds of media. It stands to reason that all kinds of media should also be able to carry a narrative in such a way that it can be (re-)introduced into that same system in mimesis₃. The circularity of the mimetic activity would otherwise require an intermediary step to translate, for instance, a purely written narrative back into the medium-independent mimesis₁. Neither Ricoeur nor Bruner discuss the risk of this medial discontinuity. Conversely, through laying out their frameworks for creating and receiving narratives, they also define criteria such as followability for those narratives. In the context of this thesis, this can be understood as the (sole) implicit requirement for the informative: Only that which is able to convey the interpretable in such a way that a narrative can be constructed from it, is a suitable informative. As already hinted to by Aarseth, it is the 'mind of the beholder' that ultimately interfaces informative and interpretable (and therefore, by extension, the symbolic order of culture), but it remains to be seen what the mechanics of this interface are.

Second, one might ask for the reason to use such a wide ontology as Aarseth's. While even a fixed informative can invoke nonlinear narration, it is certainly not very common, not in fiction, but especially not in historiography. The answer is twofold: Since this thesis seeks for ways to convey interpretations of the past not only with veracity, but also in a way that takes into account and exploits the fundamental human, folk-psychological mode of ordering and interpreting events in the world, all, and especially new(er) medial possibilities should be considered, if only in principle. I also want to argue (somewhat preliminarily here) that using more immersive and/or more engaging media need not be seen per se as a threat to a thorough and critical understanding of the relationship between the past and its narratives. However, Ricoeur and Bruner only speak about the interpretable of historical narratives and are agnostic about the media, but certainly not about the linearity of the informative. One should not attempt to simply transfer their frameworks of meaning-making about the past into any medium where the informative might not be strictly linear. The specific means of interaction and interpretation of that respective medium have to be taken into account, both in terms of opportunities and caveats. Clyde et. al.'s article bears testimony to this as an attempt to rigidly map scholarly historical writing onto video games.

Lastly, and most importantly, a clear-cut definition of 'text' is still missing. What is it that carries or transmits the interpretable aspect? The word 'informative' certainly suggests that any medium which carries information can be considered, as long as this information is *interpretable*. As already mentioned, Aarseth proposes to view text as information, but also speaks, rather ambigu-

ously, of text as what is being read, and of the 'reader' as one who reads, yet also of the much broader binary of "reader/receiver/audience and writer/sender/author."¹⁴⁸ All but one of the examples against which he tests his ontology are comprised of letters that form phrases or sentences that form paragraphs: written text in the traditional sense. The sole exception is an example from a personal experience of a film screening in which the reels' order got mixed up, leaving the audience somewhat confused and thus revealing their notion of the aforementioned text 'behind-the-text'.¹⁴⁹ The medium of film, however, is at odds with his definition of text as "an object of verbal communication"¹⁵⁰ earlier in the essay. I suspect that the main reason for him choosing all the other examples is their availability in the year of writing his essay, 1994.

This very loose use of 'text' can be found in the writing of other scholars as well, as Eoin Kilfeather's account of George Landow's theory of hypertext shows: "[He] makes no distinction between the terms 'hypertext' and 'hypermedia'. Hypermedia [...] may also incorporate visual and auditory elements such as graphics, pictures, video and sound – and may in fact contain no text at all. In fact Landow uses the terms hypertext and hypermedia interchangeably."¹⁵¹

It is instructive to use the term 'media' rather than 'text', both to avoid confusing Aarseth's sense of it with its more vernacular meaning as a string of graphemes on a flat surface, and to truly do justice to the variety of what has been tentatively called the 'carrier of information'. This is not to say that only so-called new media could have unusual informative aspects, which in turn affect the interpretable. Aarseth's exemplifies this with a text (in the vernacular sense) that is "forking out in two directions on a surface, forcing its witness [...] to choose one path in preference to another."¹⁵²

However, the shift from 'text' to 'media' does not yet answer the original question. One could follow Aarseth's suggestion and regard media (and not text) as information, or simply equate it with the informative aspect, but that would do nothing to elucidate the manifold relations between the forms of media – such as Landow's visual and auditory elements – and their eventual impact on the interpretable aspect. As will become clear when laying out the elements and properties of Aarseth's ontology, there is no reason to doubt the applicability of the aspects 'informative' and 'interpretable' to other media (for instance, still or moving images, sound, haptic, virtual or augmented reality) in principle. The utility of Aarseth's ontology for this thesis lies in the formulation of different relations between the interpretable and the informative aspects. However, to avoid a too narrow perspective stemming from the vernacular understanding of 'text', a comprehensive understanding of medial forms that make up the informative aspect will have to be laid

148 Ibid., 766

149 Ibid., 765

150 Ibid., 762

151 Kilfeather 1996, 41

152 Aarseth 1994., 768

out.

Before discussing any 'manifestation' or 'implementation' of historical storytelling in a medium like, for instance, location-based video games, with specific medial components like moving images, sound, input devices, or augmented reality elements, two more steps will have to be made:

First, I will present Lars Elleström's framework of the modalities of media, which divides this term into distinct, yet interdependent aspects. As it is intended to be applicable to all kinds of media, one could ask again for the utility of such a wide model. The answer is fundamentally the same as above: Working within a narrower scope than the one Elleström's framework provides might unintentionally veil important aspects of conveying historical interpretation through various media, because their possible potentialities and implications might not be realized.

Then, after having laid the groundwork, I will discuss the implications for historical storytelling in terms of Aarseth's ontology of textual forms. This will serve to arrive at a more precise conception of the structural properties of the informative, which can then be used as a guideline for the actual creation of media that conveys historical narratives.

I refrain from the more simple and certainly more familiar pair of 'content' and 'form', in which historical narratives would occupy the role of content, and the means of conveying them the role of form. For historical narratives, Hayden White already examined how one affects and structures the other in the aptly named *The Content of the Form*.¹⁵³ The previous paragraphs have been meant to show that subsuming the multitude of medial arrangements and modes of interactivity at one's disposal under the one term of 'form' will not do them justice. 'Content', then, suggests the applicability of the aforementioned notion of text 'behind-the-text' for different sorts of media – an unchanging interpretable that might be delivered or 'conducted' in different ways via different channels, while fundamentally staying the same, along with its reception.

On a final terminological side note, the word 'content' has gained a new connotation that has to do with whether it is electronically mediated or not: "A digital dualism has been infused in the idea of content, if not the content itself. The 'online' gets treated different from the 'offline', even if our experiences are similar." While the content of traditional media might be consumed, content of digital media is expected to be made for "mere consumption,"¹⁵⁴ requiring less engagement from the consumer and thus having less or no impact on them.

4.2 Modes and modalities of media

In the introductory chapter of *Media Borders, Multimodality and Intermediality*, Lars Elleström

153 White 1987

154 PBS Idea Channel, 2017

proposes to divide the notion of 'medium' into different aspects that all have to be considered if one is to understand or define it. Similar to my problematizing of the conflation of a medium's information with its means of conveyance, he criticizes that "*materiality* of media is generally not distinguished from the *perception* of media" and gives a strikingly pellucid explanation for this struggle "to separate the two. For human beings, nothing exists outside perception."¹⁵⁵ Also, similar to Aarseth identifying preconceived notions like the text 'behind-the-text' that influence our interpretation of their informative, he criticizes that scholarly efforts "as a rule start off with conceptual units such as image, music, text, film, verbal media or visual media"¹⁵⁶ when attempting to describe relations between different media.

His solution to these problems of different conceptions of media are laid out on the next pages. Instead of reiterating the bulk of his essay, I chose to compile a diagram (see Illustration 3: The modalities and modes of media by Elleström (2010a)), especially to visualize the various relations between the elements of his model. The following paragraphs should thus primarily be seen as instructions to read that diagram. I will refer to the model throughout the following chapters and make references to Elleström's terminology that can be found in the diagram.

Modalities

Elleström begins by dividing any medial expression into different *modalities*, which are interrelated and "build a medial complex integrating materiality, perception and cognition."¹⁵⁷ Those modalities are called *material*, *sensorial*, *spatiotemporal*, and *semiotic*, and in that order they range from the tangible to the perceptual to the conceptual. In that sense, each modality builds on top of the former, although this does not happen in a straightforward hierarchical way, because perception and conception happen largely unwittingly and order and interpret sensorial and perceptual input, respectively, to the aforementioned effect of all of the world already being mediated by our sensorial, perceptual and conceptual capacities, without us realizing the intermediate steps taken. Although there is this amalgamation between the modalities, Elleström maintains that "that there is a point in starting with the material aspect since this is what would exist even if all living creatures were to be wiped out from the surface of our planet," and in ending with the semiotic modality "since it can be said to include, or at least be based on, the other three."¹⁵⁸ In the diagram, the modalities are stacked accordingly and their relations are illustrated by arrows and their respective captions.

155 Elleström 2010a, 15

156 *Ibid.*, 14

157 *Ibid.*, 15

158 *Ibid.*, 17

Modes

Each modality, then, has a number of distinct *modes* of operation. Those modes are printed in italics inside of each modality, except in the case of the spatiotemporal modality where they are plotted out in a table. For this spatiotemporal modality Elleström follows "Kant's idea that space and time are *a priori* sensory intuitions[...]. Thus, because of cognitive conditions, all media necessarily in some respect receive both spatial and temporal qualities."¹⁵⁹ The table's two-dimensional structure thus reflects the dimensions of space and time. The cells' contents are examples of media that fall under the respective spatiotemporal modes. Hypertexts, for instance, consist of chunks of text that are displayed on a demarcated two-dimensional surface. The chunks themselves are immutable but can be displayed in a nonlinear order. Hypertexts, therefore, are partially fixed, two-dimensional media.

The examples with backgrounds shaded in gray within those cells are examples of virtual, or *represented* modes of the spatiotemporal modality. This is due to the cognitive capacity that allows for an "interpretation of a medium" in which "the *represented* spatiotemporal state is not the same as the spatiotemporal state of the *representing* material modality considered through the spatiotemporal modality."¹⁶⁰ For example, a photograph is two-dimensional and static in its material modality, but can have represented spatial depth due to the depth-of-field effect, or a represented partially fixed sequentiality due to blurred, stretched, or transparent objects.

Aspects

The modes of all modalities jointly "form the specific character of every medium,"¹⁶¹ but only in its *basic aspect*. Since all media (or at least their perception and use) are situated in a sociocultural context, our relation to them is typically informed by conventions and discourses, as well as the knowledge about the specific historical context in which they originated. This is what Elleström calls the *qualified aspects* of media. The effect are such medial differences as the one between 'visual text' and 'visual literature': The latter "is heavily dependent on the two qualifying aspects", while the former "is a sort of medium that can largely be defined by way of only the four modalities."¹⁶² Thus, visual text can become visual literature in the eye of the beholder if one has and applies the knowledge of its situatedness and codices of use. Crucially, this also entails that "'[l]iterature' and 'alphabetic text' are not [l] media as such" in Elleström's model – the various possible modes of their modalities are not accounted for, and thus the different characteristics of e.g.

159 Ibid., 18.

160 Ibid., 20

161 Ibid., 23

162 Ibid., 27

'auditory literature' (based on 'auditory text') or 'tactile text' (e.g. braille) are omitted.¹⁶³ As has been said, one can not expect to get a full picture of any medium without considering all of its modalities. The qualifying aspects of a medium can greatly influence the perception of and expectations toward its otherwise somewhat naive basic aspects. In the medium of 'pop song', for instance, the two the basic media 'auditory text' and 'non-verbal sound' are expected to have certain qualities that "confer on them not only the value of 'lyrics' and 'music' but also of 'pop lyrics' and 'pop music'."¹⁶⁴ The specificity of those qualities could be narrowed down even further if one were to define certain genres within pop music.

Technical media

Finally, all qualified and basic media must be realized or implemented through a *technical medium*. This is not to be confused with the material modality of the medium, which in itself is still latent, and should rather be considered as a set of more or less strict requirements which have to be met by the technical medium implementing it. "For instance, the material modality of sculpture consists of (an idea of) extended, generally solid materiality that can be realized by technical media such as bronze, stone or plaster."¹⁶⁵ A technical medium is thus not tied to one single basic or qualified medium, but can "be defined in relation to the range of basic media they have the capacity of mediating."¹⁶⁶ The qualifying aspects of a medium can also include certain technical media if they play a role in the medium's historical or cultural significance. One might for instance define oil paintings as a qualified medium, since it has "unique aesthetic qualities linked to the technical medium of oil colour, which was invented and developed at a certain time and in a certain cultural context."¹⁶⁷ It follows that a painting made with a technical medium other than real oil, but that has all the relevant properties to endow the respective instance of that medium with the same qualitative characteristics, should, for all intents and purposes, still be considered an oil painting.

Without delving into the field of semiotics (yet), it should be safe to conclude that, in media that can be said to facilitate narration, emplotment is situated in the semiotic modality. Elleström divides this modality based on the semiotic theory of Charles Sanders Peirce into *pictorial thinking* and *propositional thinking*: The two sign-functions of pictorial thinking are the indexical, "based on cause and closeness", and the iconic, "based on similarity." As has been discussed in chapter 3 Making sense of the past, those are the primary modes of the 'push' to organize experience narra-

163 Ibid.

164 Ibid., 29

165 Ibid., 30

166 Ibid., 36f.

167 Ibid., 33

tively. They refer to the "natural" or "outer world", whereas the sole sign-function of propositional thinking is the symbolic, referring to the "conventional or arbitrary."¹⁶⁸ For these reasons I will later argue that, within the semiotic modality, it is predominantly the mode of pictorial thinking, as opposed to propositional thinking, which facilitates historical narratives.

The question for the conveyance of a sound historical interpretation of the past, posed at the very beginning of this chapter, can thus be reformulated as follows: "What are the desired semiotic qualities (of any given medium) to effectively convey or facilitate a veracious interpretation of the past?" The scope of this thesis is thus to define such qualities. Just like the material modality is in principle agnostic as to which technical medium is used to implement it, those semiotic qualities should be medium-independent in principle and only act as more or less strict and more or less well-defined requirements for any such medium. It would be too presumptuous an attempt to define those exhaustively and conclusively, but a rough delineation should be warranted.

168 Ibid., 22

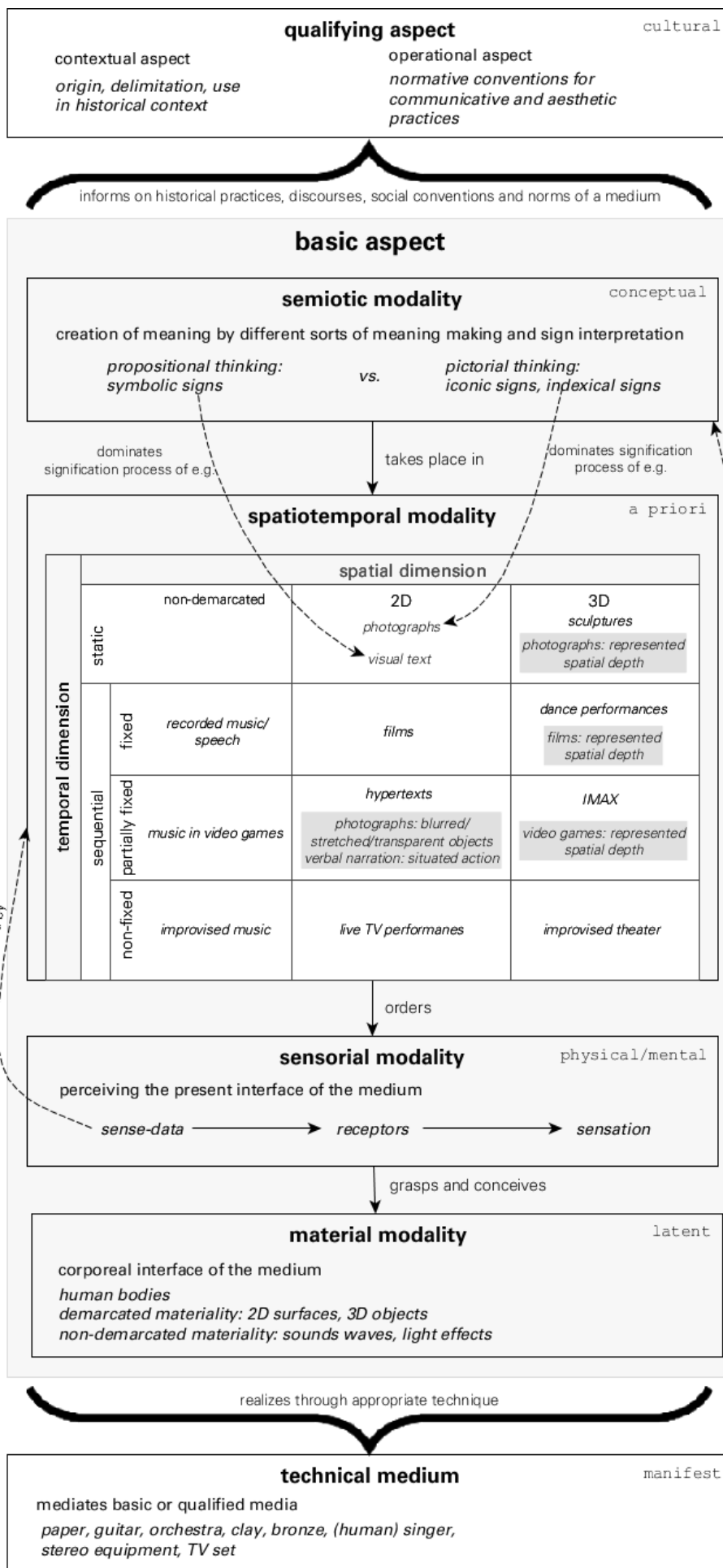


Illustration 3: The modalities and modes of media by Elleström (2010a)

4.3 An ontology of nonlinear media

Returning to Aarseth's essay, it can now be said that his interest lies primarily in the relation between the material modality and the semiotic modality, namely in the way the different modes of the former, implemented by technical media and perceived through the sensorial and spatiotemporal modalities, connect to and shape the modes of the latter.

His ontology is draft-like, in that it is by no means an exhaustive description of all conceivable categories of medial configurations beyond the strictly linear one. Different configurations of nonlinear texts were nascent in 1994, and still are today, largely driven by technological evolution. The three core elements he proposes to describe any medium are:

textons	an arbitrarily long string of graphemes, identified by its relation to the other textons, constrained and separated by the conventions or mechanisms of their mother medium
scriptons	"an unbroken sequence of one or more textons as they are projected" by the medium
traversal functions	"the conventions and mechanisms that combine and project textons as scriptons to the user" ¹⁶⁹

Table 1: Textual core elements

Although Aarseth makes another recourse to written text by speaking of 'strings' of 'graphemes', I want to stress again that there is no reason to restrict this ontology to that narrow conception of text. As he claims himself, this "model is equally applicable to a child's interrogation of a storyteller, a researcher's conversation with an artificial intelligence program, or a radio broadcast."¹⁷⁰

Then, instead of attempting to create an inventory of traversal functions, he lists a "tentative and pragmatic" set of properties that emerge from such functions:¹⁷¹

topology	linear ↔ nonlinear sequence of the script
dynamics	static ↔ dynamic interpretable of the script
determinability	determinate ↔ indeterminate traversal function
transiency	the text's intransient ↔ transient relationship to time
maneuverability	in terms of openness of access to the text's parts: completely controlled access → conditional access → explicit access → open access
user-functionality	the interpretative function of the reader ↔ the feedback functions of the user (more on this later)

Table 2: Tentative textual properties

Those properties can be exemplified as follows (see also Table 3: Examples of static media): The aforementioned 'proper text' with a 'real reader' can be categorized as *linear, intransient, deter-*

¹⁶⁹ Ibid., 767. The reference has been changed from 'text' to 'medium', but the terms 'textons' and 'scriptons' were kept.

¹⁷⁰ Ibid., 768

¹⁷¹ Ibid., 767f.

minate, with *static interpretable*, *open access* and a solely *interpretative user function*. The second hitherto used example, that of the forking out text, already qualifies as a nonlinear text, being *nonlinear*, *intransient*, *determinate* (because the adjacent scriptons of each given scripton are always the same), with a *static interpretable*, *open access*, and an *interpretative* as well as an *explorative user function*.

The third, that of the film whose reels got mixed up in a screening, would be *linear*, *transient*, *determinate*, with *static interpretable* and *completely controlled access*. However, as Aarseth's example illustrated, the maneuverability is only (completely) controlled for the audience in the movie theater, but not for the projectionist, who has in fact *open access* to all the reels, and could, in principle, play them in any order. From their perspective, the reels could each be considered as one scripton, whereas the audience would – and should, in the conception of a 'proper text' – perceive the whole film as one continuous scripton. In the setting of the movie theater, with static interpretable and only one (perceivable) scripton, the whole film should also be regarded as one texton. Conversely, in a DVD or BluRay release of the same film, the disc's menu might allow open access to the individual scenes, displayed as scriptons, each containing one texton. If the user chose to watch one full act instead, that would compile a number of textons into one larger (but still determinate) scripton.

	Proper text	Forking out text	Film (movie theater)	Film (DVD)
topology	linear	nonlinear	linear	linear
dynamics	static	static	static	static
determinability	determinate	determinate	determinate	determinate
transiency	intransient	intransient	transient	transient
maneuverability	open access	open access	controlled access	open access
user-functionality	interpretative	interpretative, explorative	interpretative	interpretative

Table 3: Examples of static media

This last example should illustrate again how different medial configurations can "conduct"¹⁷² the same interpretable aspect in different ways – except that we cannot actually speak of the very same interpretable anymore, since it is changed to a smaller or greater extend by its respective informative. My struggle to find the right terms here is symptomatic of the notion of text 'behind-the-text', which would demand the 'actual' film, and thus its interpretation, to be the same regardless of its carrying medium, which it clearly is not. "We do this out of lack of respect for the copy; it appears to misrepresent the 'real' text, even if such a thing may never have existed. In short, we prefer the imagined integrity of a metaphysical object to the stable version that we

172 Ibid., 763

observe."¹⁷³ With Elleström we can say that Aarseth criticizes how established categories sometimes exclude outliers and exceptions:

Our expectations as to what the medium of film is like and how it is meant to be perceived, all encoded in the qualifying aspect, can get in the way of an ingenious reception of the (instance of a) medium as it presents itself in its basic aspect. For example, the institution of 'cinema', including the ritual of sitting in a dark screening room in which the film is presented as one texton, can be described as an integral part of "the operational qualifying aspect" of the medium 'cinema' even though it did not come about "the day the technique was invented."¹⁷⁴ This (historically contingent) qualifying aspect cannot simply be transferred for experiencing the interpretable of the 'same' film on DVD, except if one defines its material modality so loosely that both the technical media of 'cinema' and 'DVD' would meet the requirements equally well. Therefore there will always be a necessity for renegotiating whether a new technical medium in fact educes a new basic medium (and thus probably a new qualified medium). Where Aarseth would rather do away with any such definition altogether, Elleström just highlights that "the relation between technical media and the material modality is very tight: the theoretical distinction can and must be made, but in practice the two cannot be separated."¹⁷⁵

4.3.1 The technical configuration of dynamic media and its effects

Although his essay is strictly about fiction, Aarseth's attack, at its core, goes against the very same Aristotelian notion which Ricoeur had to challenge in order to justify his framework of a narrative mode of history. According to it the coherence, and thus the followability, of a narrative can only be achieved if each "contingency" is subject to "the poet's control."¹⁷⁶ From this point, however, their considerations follow entirely different paths:

Ricoeur is only concerned with injecting a scientifically justifiable epistemology into the moment of explaining, and thus resolving, narrative contingencies. To it he attributes the dichotomous role of bearing that potential for critical discontinuity which makes historical explanations possible, as well as bringing about the peripeteia that reflects the fundamental aporia of being-in-time, and thus make the narrative worth following. By merging the *Confessions* and the *Poetics*, he answers the question of the followability of a story in the context of a fixed informative, and has, in the subsequent chapters, nothing to say about questions that might arise from different technical configurations of Aarseth's notion of media (or 'text' in his terms).¹⁷⁷

173 Ibid., 764

174 Elleström 2010a, 25

175 Ibid., 30

176 Ricoeur 1984, 162

177 Others noted this as well, c.f. Kilfeather 1996

Aarseth, instead, asks about the structure of texts, their malleability and interactivity, and how this changes the way they are received (not read). Any text without a fixed informative must raise the question whether all of its versions or iterations make for good stories. How stark can the contingencies get? How convincing can the explanations to resolve those contingencies be? As Aristotle said, what is acceptable (i.e. what can be accepted *after all*) in a narrative is entirely subjective, but what Aarseth puts forth might demand a lot of distention from this human capacity. He addresses this problem only in part: "The user is responsible for the images, but the text is in control and can dictate changes without any deference to external logic."¹⁷⁸ This works due to the 'principle of minimal departure', as Marie-Laure Ryan calls it. It states that

"when readers construct fictional worlds, they fill in the gaps [...] in the text by assuming the similarity of the fictional world to their own experiential reality. This model can only be overruled by the text itself; thus, if a text mentions a blue deer, the reader will imagine an animal that resembles her idea of real deer in all respects other than the color."¹⁷⁹

Aarseth concludes that therefore, "fictions are neither logical nor illogical." The description of blue deer is accepted "because nobody is 'there' to contradict it. A fiction, then, is not about something that does not exist but about something that it is meaningless to contradict."¹⁸⁰ This is not to say that those texts can be self-contradictory, but whether they appear to be coherent to their users (i.e. appear to avoid contingencies, or resolve them) is an entirely different matter. For his conception of nonlinear literature Aarseth has to do away with the Aristotelian notion of 'the poet's control'. He consequently prefers the term 'experience' of such media.

It stands to reason that, if recipients of *fictional* narratives spontaneously employ the 'principle of minimal departure', they will do so for historical narratives as well – after all, those are expected to be accounts of the real world. Historical narratives will thus have to be context-sensitive with regard to the recipients' cultural background and overrule their implicit assumptions about the past. I had already put forth this notion with regard to Troy and Ephesus in 3.4 Narrative vs. nomological understanding and knowledge retention. What techniques might be feasible to do so will be discussed later. For now it is only worth noting that there might be a slight risk of creating too many or too stark contingencies (within a given amount of time), thus intervening too drastically in the narratee's world building efforts and rendering the narrative unfollowable. Aiming at providing (mere) 'experience' of media, rather than narrative, would mean to throw out the baby with the bathwater.

However, I would argue that contingencies in historical narratives need not be regarded a necessary evil that is only to be employed where inevitable. Not only make they the narrative inter-

178 Aarseth 2003, 777

179 Herman et. al. 2005, 447

180 Aarseth 2003, 777

esting in the first place, they also have the capacity to create more effective learning experiences. As described in my account of the helping experiment (see section 3.4 Narrative vs. nomological understanding and knowledge retention), it was precisely that contingency in the *story* given to the third study's participants which had a positive educational impact.

4.3.2 Interactivity in hypertext and cybertext

Hypertext and cybertext are two categories of such media in which the contingencies will be harder to resolve, and thus the conclusions (if there are any) harder to accept. They are certainly not the only categories of nonlinear texts – the aforementioned example of a text forking out on a surface would fall in neither – but at least among the more common ones. Thus, these categories are pragmatic as well, like the aforementioned six properties of texts with which they can be described. I will use them here to exemplify the effects that different combinations of said properties can have on the activity of receiving a medium.

Hypertext

Hypertext is characterized by "explicit links"¹⁸¹ (in contrast to hidden ones) between its textons. The sole technical difference from the discussed linear text lies in this traversal function, which only allows jumps from one scripton to another, but only to those that are offered to the user, and typically not to any 'right' or 'correct' one. Thus, "the main feature of hypertext is discontinuity"¹⁸² in a twofold sense: By following a link, the scripton displayed to the user is replaced by a new one, suddenly and without any spatial continuity. The change from the recipient's perspective is profound: The semantic connection between two such adjacent scriptons is less clear, due to this technical arrangement (the jump), but also because the user cannot be certain that their reading activity is following any, or preferably the only, path to a meaningful conclusion. Those two effects are not to be conflated: Discontinuity, brought about by the 'jump' between adjacent scriptons, is primarily a syntactic problem and does affect the followability of a narrative only indirectly. Conversely, the contingencies, caused by the user's decision to follow a given link, are entirely a question of semantics.

One fundamental impact on the narrative's coherence becomes apparent right away: The key difference that Ricoeur had identified between (fictional) narrative and historical narrative is that, while for the former the rule "to narrate what has happened is already to explain why it happened"¹⁸³ does apply, it does not for the latter: "Every historical narrative is looking for an expla-

181 *Ibid.*, 768

182 *Ibid.*, 771

183 Ricoeur 1984, 154

nation to incorporate into itself, because it has failed to explain itself."¹⁸⁴ In hypertext, however, neither the smooth succession of events that allow equating 'one after the other' and 'one because of the other' is provided, nor are the explanations that promise to eliminate contingencies.

The former problem might be mitigated by more elaborate methods of displaying and swapping the interpretable's scriptons than the rather lumbering 'jump' that Aarseth described in 1994. The latter could be mitigated if the text's author sees to carefully designing an intricate traversal function that guarantees at least a semantically seamless reception of the text, i.e. one that minimizes the contingencies in the informative. How explanations in a hypothetical historical hypertext could be provided will have to be discussed later.

In any case, the responsibility for explaining and thus resolving contingencies, which would fall to the author in a traditional, linear text, is now shared between author and user, but must ultimately be performed on the user's side. It cannot be said that they would simply have to invoke a more resilient version of the 'nomological' (Ricoeur), or 'puzzle-solving' (Bruner) mode of understanding to resolve those contingencies in the narrative – something else has changed in their role as recipients: The "understanding (beyond trivial) of a nonlinear text can never be consummate understanding, because the realization of its script (and not just its meaning) belongs to the individual user, who is acutely aware of his or her own *constructive participation*."¹⁸⁵ Thus, a subset of the user-functionality, more precisely of the user's feedback functionality, has to be introduced to describe nonlinear texts properly:¹⁸⁶

The explorative function	in which the user decides which "path" to take
The role-playing function	in which the user assumes strategic responsibility for a "character" in a "world" described in the narrative
The configurative function	in which textons and/or traversal functions are in part chosen and/or designed by the user
The poetic function	in which the user's actions, dialogue, or design are aesthetically motivated

Table 4: User feedback functions

Apart from the already mentioned properties of *nonlinearity* and maneuverability through the *explicit link*, hypertext can be classified as *determinate* and *intratextonically dynamic* (meaning that the textons do not change, but their arrangement does). The user assumes an *explorative feedback function* and with it the responsibility of realizing the medium's script. (See also Table 5: Examples of dynamic media.)

184 Ibid., 155

185 Aarseth 1994, 769, emphasis mine

186 Ibid., 768, converted into table format

Cybertext

Cybertexts are self-changing texts whose "scriptons and traversal functions are controlled by an immanent cybernetic agent, either mechanical or human"¹⁸⁷; this agent could be a computer, or for instance the game master in a pen-and-paper role-playing game. Those texts are at least *non-linear* with a *dynamic interpretable*, but could also be *transient*, *indeterminate* and their textons entirely *controlledly accessible*.

The most important distinction Aarseth makes is between determinate and indeterminate cybertexts. *Determinate* cybertexts have predictable behavior, in that the user's actions will always have the same effects (i.e. yield the same scriptons), or, if they are *transient*, the passing of time will always change their state in the same way. Conversely, *indeterminate* cybertexts cannot be predicted and are typically *textonically dynamic*: the arrangement, but also the amount or content of textons themselves can vary.

Aarseth's example of a determinate cybertext is the "classic game *Adventure*, the first of the highly popular computer game genre"¹⁸⁸ of the same name, in which the user interacts with the cybernetic agent to explore the 'game world' as an avatar: They try out different actions to see what the text will yield, but contrary to hypertext, might be denied access to certain (or even most) scriptons, either temporarily or permanently. The cybernetic agent gives account of the current position of the user in the text, the effects of the user's actions, and guides them via affordances. Just as the followability of a hypertext depends on its traversal function's capacity to afford a (semantically) seamless reading/receiving process, the degree of followability in a cybertext depends largely on the capacity of the cybernetic agent to guide the user along a meaningful path, in the sense that the user's actions yield a narrative string that is worth following by Ricoeur's standards. The interaction between user and the text/the medium in *Adventure* is a back and forth of cybernetically generated statements and commands by the user, which may read as follows:¹⁸⁹

You are inside a building, a well house for a large spring.
There are some keys on the ground here.
There is a shiny brass lamp nearby.
There is food here.
There is a bottle of water here.
TAKE KEYS
Ok.
....
LEAVE
You are at end of road again.
DOWN
You are in a valley in the forest beside a stream tumbling along a rocky bed.

187 *Ibid.*, 773

188 *Ibid.*

189 *Ibid.*, 773f.

DOWN

At your feet all the water of the stream splashes into a 2-inch slit in the rock. Downstream the streambed is bare rock.

DOWNSTREAM

You don't fit through a two-inch slit!

Just as in hypertext, the user participates actively in constructing a determinate cybertext's script. However, while in hypertext a number of possible plots are already laid out for the user, who, by choosing one link over another, only makes them appear in a distinct order and thus creates a narrative, the user of a determinate cybertext also has to be active in re-creating those plots. Their actions might, or might not, evoke the next scripton in a predefined plot with a (narratively) meaningful outcome. "In fiction the story determines and hides behind the plot, which produces the action, whereas in [determinate] cybertext the plot itself is hidden, and so the discursive causality is reversed: action determines (or seeks in vain for) the plot."¹⁹⁰ With other words, in hypertext there is nothing the user 'does in' the script of a hypertext, while in cybertext there is no script if the user 'does nothing'. What the user will (attempt to) 'do in' the cybertext is largely guided by the aforementioned affordances, or hints by the cybernetic agent as to what can be done in the respective situation (the state) in the interpretable. In the above block quotation, the enumeration of things in the well house are all very overt affordances.

Adventure can be classified as *determinate, intransient, intratextonically dynamic, with completely controlled access* to its scriptons, and not just an *explorative*, but also a *role-playing* user feedback function that is reflective of the user's direct involvement in the interpretable (c.f. Table 5: Examples of dynamic media).

There are a number of conceivable strategies to minimize the contingencies that will inevitably arise from the limited number of available plots in a determinate cybertext. The first follows so naturally from the user's actions 'in' the interpretable that it is easily overseen: The conflation of user, recipient, and main character. Text-based media like *Adventure* provoke this conflation by simply addressing the user with the pronoun 'you', while e.g. video games with a 3D environment typically display the 'world' (of the cybertext) with an over-the-shoulder third-person view of the avatar, or directly from their first-person perspective. The user will be inclined to perform actions that are consistent with the avatar's character, with whom they identify, and which are thus consistent with the interpretable presented to them. With other words, they will tend to 'do' what 'makes sense' for the character they are playing, which, in turn, is more likely to yield a meaningful narrative.¹⁹¹

Apart from that conflation, the two most frequently used strategies to minimize contingencies

190 Ibid., 774

191 Other psychological and even neurophysiological reasons that allow for this conflation exist but must be omitted here.

are the spatial restriction and the death of the avatar. On its face, both are an embarrassment waiting to happen, because they are not as elegantly inscribed in the very relation between the medium's user and cybernetic agent, but instead expressions of the technical restrictions that are the limited number of available plots, or the limited number of meaningful actions the cybernetic agent can facilitate. The interpretable's avatar must be confined to a – metaphorically – limited 'space' in which the author of a determinate cybertext can create a consistent and, crucially, finite number of plots. This limitation of the informative aspect of a medium is often expressed in the interpretable as the – now literally – confined space of 'levels' or 'maps' like isolated islands or closed off facilities that the main character cannot leave. This spatial restriction is joined by its temporal counterpart, the death of the avatar: It expresses, again through the interpretable, that the user has reached a 'dead end' for the avatar's available plots and thus the time of the narration (but not the narrative!) has to be terminated.

Since we already crossed the – admittedly faint – line between texts and games, it is now warranted to recur to the MDA framework (mechanics, dynamics, aesthetics) that was briefly introduced in 2 Intersecting historical epistemologies and digital games. Through this lens, the behavioral capacities of the cybernetic agent can be called the *mechanics* of a game. The two strategies to minimize contingencies just laid out can then be seen as strikingly direct reflections of the mechanics' shortcomings in the *aesthetics* of a game.

Especially early determinate cybertexts like *Adventure* suffered from such crude mechanics to the effect that the "user could only fill, or more typically fail to fill the narrow track of the text's hidden 'plot',"¹⁹² as Aarseth notes. Two more recent examples which subvert this conundrum shall be presented here briefly.

The first one is the action-adventure *God of War III*,¹⁹³ which subverts the conflation of user, recipient, and main character. Set in an alternative version of ancient Greece and loosely based on Greek mythology, the *God of War* franchise tells the story of Kratos, a Spartan warrior who is tricked by Ares, the God of War, into killing his own family. In trying to take revenge on Ares and get relief from his grief, Kratos eventually upends the rule of the gods and thus plunges the universe into chaos. There are no plots that allow for a deviant conclusion of the game, and the misery that Kratos causes, although spectacularly staged, is neither justified nor glorified. On the contrary, Kratos' victims are presented in an empathic way, so that the recipient's motivation to see his (i.e. Kratos') goals fulfilled is jeopardized, if not entirely reverted. The subversion is this: Since without the recipient participating there can be no action, and the cybernetic agent not allowing for action that the recipient can identify with, they are in a challenging situation where they have

192 Ibid., 775

193 SCE Santa Monica Studio, 2010

to act 'in' the text, but cannot identify with their own actions. The cybernetic agent addresses the *recipient* as 'you' (by means of the main character Kratos rather than with visual text), but this 'you' is divorced from the 'you' of the *user*. Playing *God of War III* thus can feel like being subjected to the recipatory counterpart of an optical illusion with its oscillating perceptions. The recipient-'you' assumes strategic responsibility (cf. Table 4: User feedback functions) for Kratos, but the user-'you' recoils from doing so, and thus the role-playing user function is stuck halfway in its actualization. Contrary to typical role-playing, in *God of War III* the *agentivity*, one of Bruner's four constituents of narration, does not align main character, recipient, and user.¹⁹⁴

Illustration 4: "An Animus Wall, representing user's inability to sync with the memory"

The second example is the *Assassin's Creed*¹⁹⁵ series, also a franchise of action-adventure video games, which subverts the spatial and temporal restrictions of the confined space and the main character's death, respectively. The games' premise is that one's ancestors' memories are inscribed in the genetic markup and thus passed down through the generations. A machine called 'Animus' can access those memories, but rather than simply reading them, the carrier of the genes has to relive them by effectively reenacting the ancestor's life in a simulation. In so wrapping a technical present-day meta-narrative around the bulk of the historical narration, it justifies the limitations of the cybernetic agent: Only what the ancestor experienced, and thus only what the games' authors created, can be reconstructed by the Animus. Moving outside of the 'map' spatially or performing unintended actions (including dying) will cause 'desynchronization' with the plot. "Assas-

¹⁹⁴ In film or theater this is would amount to a violation of aesthetic distance (*Merriam-Webster, s.v. "aesthetic distance"*, (accessed 2018-01-11), <https://www.merriam-webster.com/dictionary/aesthetic%20distance>). A similar effect can occur through 'ludonarrative dissonance' "when a game tells the player one thing through its story and environment, and then contradicts it though gameplay" (Makedonski 2012).
¹⁹⁵ Ubisoft 2007

sin's Creed doesn't need to find organic reasons to prevent the player wandering off. Its walls aren't even invisible – they're crackling fissures that demonstrate the simulation's opposition to your independent action"¹⁹⁶ (cf. Illustration 4: "An Animus Wall, representing user's inability to sync with the memory"¹⁹⁷).

It can be said that overall, the more freedom for the user a cybernetic agent is tasked to facilitate, the more challenging it becomes to maintain semantic consistency in the interpretable in terms of leading the recipient along meaningful 'paths' of an ever growing number of plots. Somewhere along this curve of growing complexity is a sort of tipping point at which it becomes more economical to abandon the notion of predefined plots altogether and have the cybernetic agent manage a system that either generates plots dynamically in response to the user's actions, or to connect multiple users within the same informative and let them act and react to one another's actions. Those cybertexts will eventually be too complex to be determinate.

Finally, located at the far end from 'proper text' in the spectrum of Aarseth's ontology is indeterminate cybertext. His example is TinyMUD, created in 1989 as a variant of a MUD (Multi-User Dungeon, later also called Multi-User Domain), in which users were connected via the then nascent internet. MUDs share many of their characteristics with the massively multiplayer online role-playing games (MMORPGs) which succeeded them: Users take on the role of a character in a simulated world, often in a fantasy-style setting with different races, critters, and magical abilities. Depending on the variant, they could take on 'quests' to follow certain more or less elaborate, predefined plots, fight against one another, explore the simulated world, or simply act out their self-created role. Contrary to determinate cybertexts, MUDs offered a narratively open-ended space "where people could enjoy complete anonymity and freedom from their social and physical selves [...], doing things with words that they would normally never do,"¹⁹⁸ and thus exceeded any hitherto held conception of fiction. What users typed in their role-playing interactions with other users in these fictional worlds was at least in part motivated poetically. This 'behavior' created new, albeit fleeting and narrowly accessible textons for other users. The nature of a MUDs textual experience for any given user at any given point in time was so unpredictable that the aforementioned notion of the text 'behind-the-text' proves entirely inapplicable here, and an attempt to describe it in terms of narration, let alone narrative, is optimistic at best.

TinyMUD expanded the possibilities of this system even more by allowing its users for the first

196 GamesRadar+, 2015

197 *Assassin's Creed Wiki*, s.v. "Genetic Memory", (accessed 2018-01-05), http://assassinscreed.wikia.com/wiki/Genetic_memory?oldid=708134

198 Aarseth 1994, 776

time to "create their own rooms, objects, and puzzles in the game,"¹⁹⁹ thus not only adding new textons but expanding the cybernetic agent itself with new traversal functions. It can thus be classified as *indeterminate*, *intransient*, *textonically dynamic*, with *completely controlled access* to its scriptons, and *explorative*, *role-playing*, *poetic*, and *configurative* user functions (c.f. Table 5: Examples of dynamic media). MUDs share all those properties except for the *configurative* user function.

	Hypertext	Adventure	TinyMUD
topology	nonlinear	nonlinear	nonlinear
dynamics	intratextonically dynamic	intratextonically dynamic	textonically dynamic
determinability	determinate	determinate	indeterminate
transiency	intransient	intransient	transient
maneuverability	explicit link	completely controlled access	completely controlled access
user-functionality	interpretative, explorative	interpretative, explorative, role-playing	interpretative, explorative, role-playing, configurative, poetic

Table 5: Examples of dynamic media

4.4 Possible applications of Aarseth's ontology

Where could the places Troy, Ephesus and the German Emigration Center fit into this ontology in such a way that they might facilitate historical narratives? Certainly not in indeterminate cyber-texts, because those are unsuited for historical narratives which must rely on a scholarly defensible (i.e. veracious and verifiable) account of the past. I cannot see a scenario where narratives generated dynamically or by users would meet those requirements. With artificial general intelligence on the horizon, it is not entirely inconceivable that building a cybernetic agent capable of implementing all the processes needed for creating scholarly defensible history (or even guiding its users to do so) will one day be possible. Until this is proven to work, I will confine these considerations to hypertext and determinate cybertext.

As apprehended in 1 Introduction, Troy is a challenging case because its archaeological site provides very little perceivable material that a narration could work with. The way it was presented during my visit in 2013 certainly allowed *interpretative* and *explorative* user functionality, but at least the latter would just be born out of necessity: The site did not guide the visitor in any way, like e.g. hypertext would do with explicit links, and did not instruct them with a hypothetical

199 Wikipedia, *the Free Encyclopedia*, s.v. "TinyMUD", (accessed 2018-01-08), <https://en.wikipedia.org/w/index.php?title=TinyMUD&oldid=769919582>. Also see <http://papa.motd.org/cave/tinymud/tinymud.pdf> for a full list commands.

set of rules how to go about the exploration either. With Elleström we could say that Troy is lacking a distinct operational qualifying aspect. Even if there might be historical *interpretation*, it is hard to imagine how the site itself would be perceived as telling a historical *narrative*. However, I had also written that there might be an opportunity lying in the multiple 'pasts' that are competing with one another in Troy. One option for exploiting this could be a location-based smart device app through which the visitor could follow a (fictional or real) person who lived in Troy, and experience a narrative about that person's life on-site – either in the fashion of a hypertext with explicit links and third-person perspective, or through determinate cybertext with a role-playing user functionality and (thus) first-person perspective. That app, however, would have to rely primarily on its own (visual or auditory) material; it could not make very many references to the actual site. The tension between different 'pasts' could be emphasized by guiding the visitor's attention to one particular structure or column while disregarding everything else in the immediate proximity if it belonged to another time period. It stands to question how much that would add to the visitor's understanding of the past. Presence at the site might not even be necessary at all.

In Ephesus, a similar app would have much more physical material to work with, so the relevant challenge lies in choosing and connecting the objects and structures in that space into a verisimilar, veracious, and verifiable narrative, without the visitor becoming distracted by everything that does not belong to that narrative. Even though I wrote in 1 Introduction that Ephesus invites the mind to graft its own stories onto the physical substrate, I am confident that even e.g. a location-based audio guide would keep the visitor on the 'right (narrative) track'. Such audio guides are successfully used by countless museums, and in my experience visitors follow the instructions quite diligently. A location-based audio guide would be akin to a hypertext, except that it would use audio as its technical medium and the physical movement of the visitor instead of the 'jump' between scriptons, which had been identified as a potential problem for the interpretable's coherence in section 4.3 An ontology of nonlinear media. Other cybertextual implementations that would afford a role-playing user functionality could be used to the same effect. The mechanics by which the visitor would be kept 'on track' there will be discussed in the first section of 5 Nonlinear narration and historical narratives.

No speculation about possible applications is needed for the case of the German Emigration Center. Its environment does fundamentally consist of a string of 'rooms' that can only be traversed in a linear fashion. Their order aligns with the order of stages of the emigrant's journey, i.e. with the temporal progression of the process of emigration. I would argue that the linear arrangement of the rooms and the (naturally) linear progression of time makes it obvious for the visitor how to move through the museum, room by room. That is to say, the operational qualifying aspect

of the museum as a whole needs no explication, and therefore the maneuverability can be entirely open in principle.

The contents of each 'room', however, cannot only be accessed openly, but lack an overt guiding structure. If each 'room' is one scripton, then the contents of the room are its textons. They are intratextonically dynamic in a specific, more narrow way: Contrary to Aarseth's example of hypertext, textons in the German Emigration Center do not change, but their arrangement does – *within* the confines of one and the same scripton. Does that not contradict the notion of a scripton as "an unbroken sequence of one or more textons *as they are projected*" by the medium? Only if the traversal function, "the conventions and mechanisms that combine and project textons as scriptons to the user,"²⁰⁰ is defined as belonging to the medium itself. If this is not so, then the visitor has a configurative feedback function, which seems to be the case here. Therefore each scripton (each 'room') acts like a small indeterminate cybertext, strung up within the hypertext of the museum as a whole.

5 Nonlinear narration and historical narratives

Although the term 'plot' has been used to describe hypertext and cybertext, very little has been said about the followability of their interpretable aspect and whether that interpretable aspect could actually be considered narrative, or at least narration. Aarseth, as mentioned early in the previous chapter, only concerns himself with the manifold possibilities that nonlinear, dynamic media brought about and demands a sort of open-minded recipatory attitude. This would mean to disregard the established norms and conventions of linear, static media, namely the requirement for an unchangeable text 'behind-the-text', created by an author, with a defined beginning, middle, and end.

Two caveats will have to be made with regard to the generality of this demand, one that goes back to Ricoeur's notion of mimesis₂, and one that concerns the relation between a medium's material modality and its qualifying aspect.

First, it has been said that mimesis₂ grasps together into a narrative the suitable heterogeneous elements from the syntagmatic order of culture, and thus resolves the distention of consciousness by subsuming (non-coincident) events in time under one 'thought' or 'point' of a story. The apparent problem with this activity of emplotment in hypertext and cybertext is that the nature of their informative aspect might not guarantee a definitive closure of a narrative string, and maybe not even a followable path to get there. There can be no narrative if either is missing: "To understand

200 c.f. Table 1: Textual core elements

the story is to understand how and why the successive episodes led to this conclusion."²⁰¹ The fundamental Aristotelian insistence on maintaining the 'poet's control' can thus be interpreted as a precaution to protect narration from uncontrollable, unresolvable contingencies that could compromise its followability and meaningful conclusion – a measure with such great utility and ubiquity that it is seldom questioned.²⁰² Reflecting this notion, and encoded in the qualifying aspect of the medium 'visual literature' (Elleström) or 'proper text' (Aarseth), is the normative convention due to which we know how to go about the endeavor of reading and interpreting a book without any specific instructions.²⁰³ Were it not for this, the *open access* to all its scriptons that this medium allows would leave us clueless as to how to (re)construct a string of events from it that could possibly lead to a meaningful conclusion. When taking this into account, the notion of a text 'behind-the-text', prone to producing a certain lack of respect for the copy that Aarseth lamented, is by no means pointless, at least when one aims for constructing a compelling narrative. As has been said before, receiving a text or any other medium as nothing but unbounded 'experience' would also remove the requirement for a meaningful conclusion, thus the need to resolve discontinuities, and thus the need for the 'ancillary' historical explanations. For the effort of this thesis, this must mean that *mimesis*₂ must also be possible in hypertext and/or cybertext. But how?

The answer lies in cybermedia itself. This being fundamentally a discussion of possible tensions between a medium's qualifying aspect and a, for whatever reason,²⁰⁴ unexpected basic aspect, resisting our preconceived normative conventions, leads to the second caveat: Neither Aarseth nor Elleström acknowledged that, once a medium's material modality requires in its implementation some programmable device (with Elleström, a programmable technical medium), the distinction between the basic aspect and the *operational* qualifying aspect of that medium becomes less and less meaningful. As has been shown in the somewhat technical discussion about more or less intricate traversal functions in hypertext, and strategies like the confined environment and the character's death, both encoded in the cybernetic agent of a cybertext, those normative conventions are still very much present and tell us, more or less subtly, how to go about receiving those media. In contrast to a 'proper text' with its *open access*, only afforded by the qualifying aspect of litera-

201 Ricoeur 1984, 67

202 Ricoeur did not attack this notion either (cf. the first two paragraphs of section 3.3 The epistemology of narratives)

203 As has been shown in the short discussion about the sub-genre 'pop song' and its conceivable sub-sub-genres, media literacy is required to a lesser or greater extent to properly receive instances of the respective medium. Even where that literacy is given, any particular work might deviate from the cultural "sediment" to a lesser or greater degree and has to be received in its own right rather than through an immutable cookie-cutter approach. In turn, these "rules [of the qualifying aspect] change under the pressure of innovation" stemming from "new works, new, that is, before they, in turn, become typical." (Ricoeur 1991, 25)

204 Aarseth suggests a few "scales of change in a text's metaphorphosis:" unintentional, usurpatory, plagiarism, and subversive (Aarseth 1994, 765)

ture, the very media *themselves* can now be programmed to keep their recipients in the bounds of (ludologically and/or narratively) meaningful reception by more or less strictly *controlled access* (cf. Table 5: Examples of dynamic media) to their textons. A user, engaging with an electronically implemented interactive medium, often needs none or very little prior knowledge about its operational qualifying aspect, because it is already inscribed in its very material modality.²⁰⁵

Jeremy Antley was already quoted to this effect in *2 Intersecting historical epistemologies and digital games* by calling digital games 'closed constructions'. In more complex interactive media the causal relation between the qualifying aspects, especially the normative conventions, and the material modality are actually reversed: Rather than principally laying open to whichever receptory mode the user chooses, the proper way to receive such a medium will actually have to be learned by a new user. In the MDA framework this can be expressed as follows: The user attributes *aesthetic* qualities to the *dynamic* run-time behavior that is generated by the medium. Different (inter)actions will yield different *dynamics* of various degrees of (*aesthetic*) desirability, and thus the user will be able to infer what the medium's (intended) normative conventions, encoded in its *mechanics*, are.

A side-note has to be made here which is relevant for the use of electronically implemented media in mediating history. It has been alluded to in the previous section and will only be conclusively answered in the "Cybermedia" section of 5.4 Persuasive tools: The effect on the users' attitude when engaging with such 'closed constructions' is pervasive in modern culture: Without a deep understanding of how the cybermedium('s agent) works, and with the normative conventions communicated to them through the medium itself, they must come to an understanding that the best (if not the only) way to receive that medium is by simply trusting it to present whichever interpretable is appropriate for the given user in the given situation. In museums, open-air sites, or any context where electronic devices are used to convey knowledge about the physical space and objects in it, this can lead to an unfortunate take-over: "The devices' screens themselves can also get in the way, distracting visitors from the items on display and focusing their gaze upon the machine instead of on the museum itself."²⁰⁶ Worse yet, Sara Perry's testing "has even suggested that apps falsely lead users to feel that they've visited 'everything', when in fact they've visited only a fraction of what non-users experienced."²⁰⁷

To return to the question of whether hypertext and cybertext can afford mimesis₂: Electronically implemented media do not wholly replace culture at large as the carrier of their respective opera-

205 c.f. Mark Brown's discussion on "How Game Designers Protect Players From Themselves" (2017)

206 Perry 2015, 36

207 Perry 2016

tional qualifying aspect, nor that all such media do control access to their scriptons in a strict manner. My point here is rather that even a greater level of freedom to explore an electronic medium's scriptons still has to be encoded in its material modality by the author. Without their decision, the respective medium would not have a traversal function (hypertexts) or a cybernetic agent (cybertetxts) that could afford that relatively open exploration. In game studies, such cyber-media where the recipient "chooses what, when, and how they want to approach the available content" are called sandbox games.²⁰⁸ The arguably most popular game in that genre, *Minecraft*, affords its players a great variety of creative endeavors – precisely because it gives them access to different natural resources that can be manipulated due to a built-in rudimentary physics engine.

These two points shall function as precursors for my attempt to answer the fundamental questions which arises from Aarseth's ontology with regard to historical narratives:

1) Can we still speak of narrative and narration in nonlinear interpretables?

It has already been suggested at the end of section 4.1 Points of connection between historiography, media, and textual ontology: How can nonlinear, dynamic media facilitate well-formed narrative with satisfying conclusions, thus allowing its recipients to 'extract a figure from a succession'? It has just been shown that, even for the reception of nonlinear media, this notion is too important to be abandoned altogether, and that such media can – at the very least – support a structured reception of their interpretable aspect, by effectively shifting the operational qualifying aspect from the realm of culture into medium's very materiality. The question remains: Is this enough to facilitate well-formed narratives in nonlinear interpretables?

2) How can we claim historical veracity in nonlinear narratives?

Even if we leave aside the first question, a second problem becomes apparent immediately: The shift in the role of the recipient from a mere narratee, consuming a fixed interpretable, to something that is more akin to an explorer of a non-linear textual space, also entails a shift in the truth claim of the plots in such a space. As it is apparent to the recipient that there is more than just one narrative, with one carefully reared conclusion, it is also apparent that the particular narrative unfolding in response to their actions will lead to a conclusion which can no longer claim such truth. One of the perils Clyde et. al. already saw in fixed historical prose is that if it "does not present a cohesive narrative to the reader, the reader then creates one."²⁰⁹ As discussed, Ricoeur claims that "if every narrative so explains itself, in another sense no historical narrative does so. Every historical narrative is looking for an explanation to incorporate into itself, because it has

208 *Wikipedia, the Free Encyclopedia*, s.v. "Glossary of video game terms", (accessed 2018-01-15), https://en.wikipedia.org/w/index.php?title=Glossary_of_video_game_terms&toldid=820209168#S

209 Clyde et. al. 2012, 8

failed to explain itself. [...] We reconstruct an agent's calculations when a course of action surprises us, intrigues us, or leaves us perplexed."²¹⁰ This is true for linear media. In a nonlinear interpretable, however, one of two things might happen:

1. More likely in hypertext: The recipient might experience the calculations as belonging to some acting agent other than them (i.e. the one presented by the medium), but each individual calculation as contingent, simply because there is more than one story-path to follow, but no role-playing function to align the agent's calculations with the user's. In this case, the text's truth claim could easily be perceived as a mere matter of perspective.
2. More likely in cybertext: If the interpretable might be experienced with a role-playing feedback function where the acting agent is the recipient themselves, the calculations might simply be perceived as their own, rendering the historical explanation entirely omittable.

This is not to say that one can and should not present different, possibly conflicting, perspectives on a historical matter, even in the very same text, but if they are perceived as functions of an arbitrary number of story-paths, then the notion of a more or less veracious historical explanation loses its meaning.

As should become apparent now, these questions about the followability of nonlinear texts on the one hand and their truth claim on the other are again reflective of the dichotomous role that historical explanation plays in narratives. Between either being unable to resolve narrative contingencies, or becoming entirely obsolete, the tension that is put upon it by nonlinear narratives has to be taken into account when discussing the mediation of history through interactive narratives.

5.1 Rhetorical operations in linear and nonlinear media

To answer the question of followability and conclusion in nonlinear media, I have to return to Aristotle's notion of the 'poet's control' and attack it from a different perspective than both Ricoeur and Aarseth did.

In his re-examination of ancient rhetoric with relation to hypertext, Gunnar Liestøl analyzes differences in the configuration of the five canons of rhetoric, namely *inventio*, *dispositio*, *elocutio*, *actio*, and *memoria* between oral speech and hypertext.²¹¹ All are, naturally, relevant for nonlinear narratives, but for the question at hand only the first and second step, *inventio* and (to a lesser degree) *dispositio* shall be considered here. Although usually translated otherwise, Liestøl insists that *inventio* "is a discovery, not an invention, in which the speaker relates to existing top-

²¹⁰ Ricoeur 1984, 155

²¹¹ The original terms in Ancient Greek are (respectively) *heuresis*, *taxis*, *lexis*, *hypocrisis*, and *mneme* but the corresponding Latin terms are more commonly used.

ics, places or loci, commonplaces, for proof and persuasion."²¹²

It is a preparatory activity in which the orator selects relevant elements for their speech or the argument they want to advance, which depends on a capacity called *technê*. *Technê* both means "a practical skill" and "the systematic knowledge or experience which underlies it."²¹³ The rhetoric elements one selects by means of that capacity can either be outside-*technê*, "found outside the orator", or within-*technê*, depending "on the orator's powers of reasoning and imagination."²¹⁴ The two possible translations for *inventio*, 'invention' and 'discovery', are thus both valid insofar as they emphasize either of its complementary aspects. The more common use, 'invention', can itself be regarded "a reflection of the primacy given to the writer in linear texts,"²¹⁵ insofar as it emphasizes the within-*technê*, more idiosyncratic conception of a text having been thought up in the author's mind, as opposed to the emphasis on the outside-*technê* cultural substrate from which the author draws inspiration.

The thus selected and/or invented elements then have to be given a syntagmatic order in *dispositio*, such as to best convey the argument or conclusion the orator wants to advance. Unsurprisingly, this order is strictly linear for what Aarseth called 'proper text'.

As has been mentioned in section 3.1 Narrative as an expression of human experience of time, even in such linear text the reader does not merely 'absorb' a narrative thus laid out. As we follow the story, all that has already happened is evaluated to formulate "expectations concerning the outcome of the story, expectations that we readjust *as the story moves along*, until it coincides with the conclusions."²¹⁶ We can thus say that not only do both aspects of *technê* belong to the domain of the author, but their arrangement (*dispositio*) does as well. Simply put, neither can the reader choose what the story is about, nor how it will be told. This is what Aarseth meant by saying that in linear, static media the "story determines and hides behind the plot, which produces the action" (see 4.3.2 Interactivity in hypertext and cybertext). Nevertheless, we still have to actively re-discover it in the process of reception, guided by the operational qualifying aspect, and thus reintroduce it back into the syntagmatic order of culture (in *mimesis*₃).

Liestøl now argues convincingly that the shift from linear to hypertext can be described as a reconfiguration of *inventio* and *dispositio*, and thus engenders a shift in the relationship between author and reader, as well as the reception of the medium's interpretable itself. *Inventio* is now an

212 Liestøl 1994, 99

213 Halliwell 1986, 44. There is no equivalent concept in the English language, and the ancient Greek philosophers, most prominently Plato and Aristotle, did not precisely agree on the meaning of *technê* and its fields of application. The notion used here is Aristotle's. Possible translations, depending on the context, are 'craft', 'skill', 'technique', 'method', or 'art' (ibid.).

214 Liestøl 1994, 99

215 Kilfeather 1996, 43

216 Ricoeur 1991, 21f., emphasis mine

activity shared between the author, who provides the elements of the text (outside-technê), and the reader, who chooses to read scriptons (entirely or partially), and follow certain links (inside-technê).

Dispositio, on the other hand, is actually performed twice: First by the author, who combines the elements into textons and links them to one another, and then by the recipient, who, through the process of reading scriptons and following links, creates one of many possible 'instances' of the text, thus becoming a "secondary author within the constraints laid down by the primary author."²¹⁷

It is easy to see how this will result in a profoundly different reception of hypertexts. Speaking in Ricoeur's terms, the reader is at least relieved of having to choose the 'components capable of figuring', but all the other parts of the activity of emplotment fall to them. As they progress through the text by reading scriptons and following links, they simultaneously create the very succession from which they are supposed to extract a figure.

The decisive question is whether this is perceived as merely choosing between several possible paths along which the hypertext story is being told, or the activity of (truly idiosyncratically) creating a new story from the provided (i.e. outside-technê) components. While even the former case will result in some uncertainty as to where the narration will lead, and whether one is following it 'correctly', the latter case truly upends Ricoeur's construct of emplotment because it renders the story's possible conclusions pointless: The ultimate function of a story's conclusion is to retrospectively connect the (merely sequential) events in time so that 'one after the other' can be equated to 'one because of the other'. If the position of 'one' after 'the other' is now defined at the user's own discretion, that is, without reference to the outside world, then there is no causal relationship to be discovered, no figure to be extracted from a succession, no distention of consciousness to be resolved. This kind of mimetic activity will in fact be viciously circular because it is nothing but an exercise in introspection, starting and ending with the reader, confirming to them that the narration they produced is no more than a reflection of themselves. The rather arbitrary sequence of contingent events of which this *narration* consists can only be called a *narrative* if it is even perceived to come to a conclusion.

As apprehended, all possible truth claims in this scenario will appear to be functions of the reader's perspective. With Clyde et. al. this can be said to fall into the deconstructionist approach to historiography.

If and how this just described recipatory attitude can be avoided in hypertext and the grip on a narrative's conclusion(s), as prerequisites to historical veracity, can be upheld, will have to be shown later. First, the notions of *inventio* and *dispositio* will also have to be applied to cybertext.

217 Liestøl 1994, 99

5.2 Reading text, receiving media

It might not have escaped the reader's notice that, instead of using the terms 'medium' and 'recipient', as demanded in section 4.1 Points of connection between historiography, media, and textual ontology, I resorted to using 'text' and 'reader' in the last section. This was partly due to the lopsidedness for written text in Liestøl's (just like in Aarseth's) investigation, and partly due to him basing that investigation on a reinterpretation of ancient rhetoric. Rhetoric is of course about the artful use of language, be it spoken or written, and it seemed an unwarranted generalization to apply his considerations to *hypermedial* reception, rather than *hypertextual* reading. The difference between those two will be delineated presently.

What's more, in section 4.3.2 Interactivity in hypertext and cybertext I provided the video games as *Assassin's Creed* and *God of War III* to exemplify strategies to minimize narrative contingencies, while tacitly omitting the appropriate discussion as to where they stand with respect to Aarseth's ontology of nonlinear media. How can one apply the notion of discrete textons and scriptons to a (mostly) seamless presentation of the informative in three-dimensional environments of video games? If such games can be called cybertexts – nonlinear, dynamic, maneuverable only by completely controlled access – will they not always be indeterminate? After all, no-one could reasonably determine the precise composition of every frame displayed on the screen, even if they knew exactly how the user would interact with the game. But if they are always indeterminate, why do we speak of certain games as having a linear storyline, of others as having a multi-linear one, and of others yet as having emergent storylines?

The obvious shortcoming of the terminology borrowed from Aarseth requires a deeper analysis of what it really means to receive the interpretable of a medium. Liestøl identifies another reconfiguration in the process of receiving (not reading) hypertext, which I will take as a starting point for that analysis.

This reconfiguration takes place in the opposition between *diegesis* and *mimesis*.²¹⁸ Plato defines *diegesis* (literally: 'narration') as the speech act in which "the poet is speaking in his own person; he never leads us to suppose that he is any one else." *Mimesis* (literally: 'imitation') is employed when the "poet speaks in the person of another," assimilating "his style to that of the person who, as he informs you, is going to speak."²¹⁹ As the clause 'as he informs you' suggests, Plato insists that *mimesis* is always a function of *diegesis*, because it has to be mediated (framed, one might say) by the poet's narration. His scope of inquiry is strictly confined to speech (and by extension, language in general), of which there are only two modes: Indirect speech, being *diegetic*, and *direct speech* (dialogue, monologue), being *mimetic*.

218 cf. Table 6: Modes of communication and cognition, roughly aligned

219 Plato 1892, 77

Modern literary theory, especially in the Anglo-American tradition, reflects this opposition in the distinction between *telling* and *showing* "with a normative emphasis upon showing as the more artistic form of expression."²²⁰ While there seems to be a straight line from *diegesis* to *telling*, the congruence of *mimesis* and *showing* is not immediately obvious: Is *mimesis* not only the poet's deplorable attempt to *show* their audience how the narration's events came to pass, to make them believe they were actually witnessing them, rather than following his merely diegetic elaborations? Liestøl espouses Gerard Genette's argument that "no narrative can 'show' or 'imitate' the story it tells. All it can do is tell it in a manner that is detailed, precise, 'alive,' and in that way give more or less the *illusion of mimesis*."²²¹ From the perspective of cognitive science we can say that following a story does not merely comprise evaluating the propositions the narratee encounters, but constructing mental images from them.²²² Thus the answer is no – showing in literature, although always mediated by the act of telling, need not be received as an inadequate imitation of actions and events *within* the narration.

Roughly speaking, telling should be aligned with Elleström's mode of *propositional thinking*, while showing should be aligned with *pictorial thinking*. As a rule, those two "ways of cognition are deeply correlated,"²²³ but for the purpose of this thesis that rather peculiar correlation with regard to written text is of greatest importance. Consider the following exemplary sentence by Walter Kintsch: "John traveled by car from the bridge to the house on the hill." It can be represented in a propositional network as follows.

```
TRAVEL[agent: JOHN, instrument: CAR, source: BRIDGE,
      goal: HOUSE, modifier: ON[HOUSE, HILL]]
```

However, the mental image created from the sentence will deviate to some degree from the bare proposition: "*John's car* might be on a *road*, and a *river* might be under the *bridge*. [...] In some cases the verbal information is richer (*John travels*); in other respects the image is richer (the inclusion of the *road* and the *river*)." The combination of propositional information and thereby created propositional translation can be illustrated²²⁴ like this:

220 Liestøl 1994, 112

221 Genette 1988, 164

222 cf. e.g. Mih & Mih, 2008 and Schneider, 2005

223 Elleström 2010a, 22

224 Kintsch 1998, 46

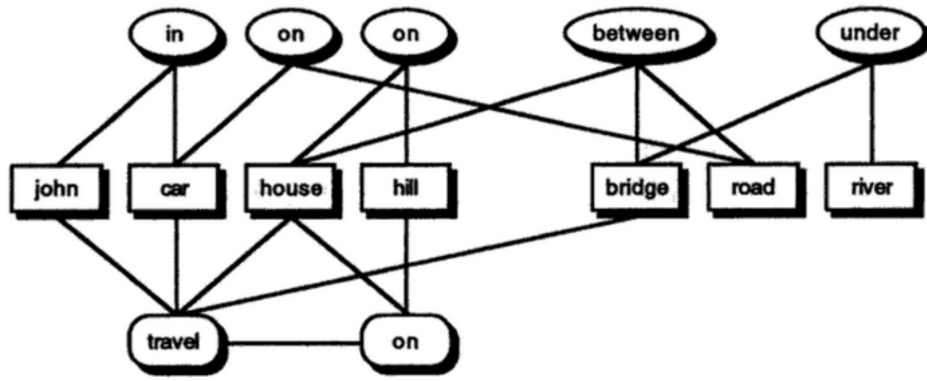


Illustration 5: Propositional network combining information and translation

The term 'mental image' is to be understood literally. Although it can be mapped onto a propositional network, there is "good evidence that imagery is not purely propositional, but rather relies on pictorial representations"²²⁵ – and not just another post-hoc proposition. But why is it that narration, in order to pass through the mode of *telling* to access the mode of *showing*, has to rely on our capacity to create vivid hallucinations from two-dimensional symbols? For Liestøl, it is due to the very nature of language as a "digital system for coding information"²²⁶ that relies on discrete symbolic signs. Those signs are created in a signification process which imposes a digital order on the analog, and is therefore necessarily reductive. In other words, language as a symbolic system has no direct (i.e. non-mediated) access to the analog and continuous. Hence "mimesis in words can only be mimesis of words."²²⁷ An, admittedly rough, congruence can thus be established between Elleström's modes of the semiotic modality and the processing of the two literary modes of *diegesis* and *mimesis*:

Plato	Am. literary theory	Topology	Scope	Dominant semiotic signs
diegesis	telling	discrete, digital	precise but narrow	propositional: symbol
mimesis	showing	continuous, analog	ambiguous but comprehensive	pictorial: icon, index

Table 6: Modes of communication and cognition, roughly aligned

With Elleström we can say that narration, thus conceived as mediated by the symbolic signs of language, is necessarily dependent on propositional thinking. However, in section 4.2 Modes and modalities of media I have stated that *mimesis*₂, at least in historical narratives, is dominated by pictorial thinking. I would still maintain this point, but has to be amended: The 'mediatedness' of a narrative by means of the symbolic signs of language functions as a sort of wrapper around the pictorial thinking that is activated in the process of re-discovering the heterogeneous elements we

225 Kosslyn 1994, 20

226 Liestøl 1994, 112. The term 'digital' appears to be common in semiotics, especially in opposition to 'analog'. In my estimation, a more expedient pair is 'discrete' and 'continuous'.

227 Genette 1988, 164, emphasis mine

are conceiving (and, therefore, perceiving) as mental images.

I should add that, even though the term 'mental images' might suggest otherwise, those images and their cognition do not belong to the spatiotemporal modality; they rely on pictorial thinking, which is part of the semiotic modality, only that in this case there is no signification process that accesses the spatiotemporal modality. If this were not the case, then it could be said that the symbolic signs of language (for instance in a 'visual text') could *represent* the mental images created from them *within* the spatiotemporal modality, much in the same way that a two-dimensional photograph can represent three-dimensional depth.

What does this entail for the reception of media, more specifically hypermedia and cybermedia, as opposed to linear, hyper-, or cybertext? Elleström regards pictorial thinking as more immediate than propositional thinking: "The indexical and the iconic sign functions are deeply related to the way the mind conceives sense-data as spatiotemporal structures." Augustine's notion of spatial time, causing the distention of consciousness, which is in turn dialectically resolved through emplotment, might therefore be interpreted as having its roots in our a priori sensory intuitions. Elleström continues: "The spatiotemporal structures conceived by our mind are 'designed' to be meaningful – not in a propositional way, but in a pictorial way."²²⁸ One might even say that, insofar as pictorial thinking and the literary mode of *showing* can be aligned, emplotment is the act of creating a syntagmatic substrate from which the 'point' or 'thought' of a story can literally be *shown* to emerge.

This is of course by no means an argument for a perfect congruence of the concepts of *showing* and pictorial thinking. An integral part of many, if not most narratives, is the account of the inner life of the characters it portrays, as well as "the most common type of social interaction between" them, "namely verbal exchanges."²²⁹ Neither can directly or accurately be represented through other sign systems than language. Genette's aforementioned statement might therefore as well be inverted: Mimesis *of* words can only be mimesis *in* words.

However, I will argue in the next section that, for not merely coincidental reasons, in both cybermedia and historiography the modes of pictorial thinking and *showing* overlap to a considerably large extent, and that cybermedia are therefore especially well-suited for a particular type of historical storytelling.

Be it in historical or any other kind of storytelling, we can safely infer that the conclusion of a story is acceptable (and simultaneously satisfying) only if the narratee arrives at it by compulsion, but not by coercion or mere chance. And this is of course the root of the aforementioned norma-

228 Elleström 2010a, 22

229 Ryan 2012

tive emphasis on *showing* in the Anglo-American tradition of literary theory: the implicit insistence to let the narratee extract a – nonetheless intended – figure from a succession. The artistic quality of this feed can then be seen in accomplishing this, even though the process is necessarily an indirect one.²³⁰ In fact, only the mode of *showing* facilitates this activity on the side of the narratee:

"In general, telling is the means of precision whereas showing is indirect and ambiguous, since the receiver must *fill in and thereby complete the message*. Showing works as a whole, an overall picture generated by the reader by connecting the given information. The *reader's activity and participation in the construction of meaning* increase when the system of communication involved moves from a mode of telling to that of showing."²³¹

Hypertext

With regard to the difference between reading and receiving hypertext, we can now find two things: At first sight, it seems to rely on two-dimensional, discrete symbols just as much as any linear, visual text. The immediate presentation – on the level of the informative – therefore depends on propositional thinking, notwithstanding that the interpretable thus constructed from it does not. What sets hypertext further into the mode of *showing* are the 'jumps', marking the reader's constructive participation and exacting from them more effort to connect the given information in the chosen scriptons.

For linear, visual text, the pictorial *reception* of narration is nested inside its propositional *reading* process. I would assume that this particular configuration has the advantage of combining the precision of *telling* with the verisimilitude of *showing*, thus being able to compel the narratee to arrive at a satisfying, yet pinpointed conclusion. This is another aspect of its utility for historiography.

In hypertext, this nestedness is of course still present in each scripton, while the jump between them is nothing less than the epitome of a loss of precision, especially when perceived in contrast to purely textual scriptons.²³² This somewhat chimeric character might be at least one of the considerable reasons why "hypertext fiction" did not manage "to achieve any popular success. In digital media, we may state that computer games are the dominant form of fiction, and today this is most significantly [sic] expressed in the advanced and innovative uses of the real time 3D environment."²³³

230 How exactly this conversion between coding systems unfolds is a question that cannot be answered here. Cf. e.g. Holland 1989 for one attempt from the school of reader response theory.

231 Liestøl 1994, 112f., emphasis mine. The similarities to Ricoeur's terminology could not be more conspicuous.

232 For the sake of the argument, I am only contrasting purely textual hypertext, and not hypermedia, with linear text. Forms of hypermedia that mix textual, audiovisual, and other elements do of course exist. The somewhat jarring effect of the jump can be assumed to be mitigated in those to some degree.

233 Liestøl 2011, 315

Cybermedia

Video games that use these environments, such as *God of War III* and *Assassin's Creed*, are much more continuous (i.e. non-discrete) on the level of their informative, which renders the terms *texton* and *scripton* hardly applicable. The semiotic modality of these (and, one might say, other non-textual) media is *directly* dominated by the iconic and indexical signs of pictorial thinking. Unbound by the first-level mediation of symbolic signs, they can be said to omit the otherwise necessarily 'illusion of mimesis' and directly *show* their narratives, without having to *tell* them.

While cybertexts like *Adventure* rely on discrete, symbolic signs and can be called determinate both on the level of their informative and interpretable aspects, modern 3D video games are in fact so complex that their informative aspect will, for all intents and purposes, be indeterminate, while the interpretable aspect – their narrative(s) – can still be determined by their authors.²³⁴ This is to say that, while e.g. the player might be afforded a certain amount of leeway with regard to their actions, the configuration of relevant events that drive the narrative or narratives to a conclusion can be predefined and cybernetically propounded to the recipient. Such games can therefore still be called determinate on the level of their interpretable.

In section 4.3.2 Interactivity in hypertext and cybertext I have stated in congruence with Aarseth that, while in hypertext there is nothing the user 'does in' the script of a hypertext, in cybertext there is no script if the user 'does nothing'. It is hard to conceive how *inventio* and *dispositio* could be applied in any meaningful way even to cybertexts like *Adventure*, which, due to their reliance on symbolic signs, are determinate in both in their informative and interpretable aspects. Yes, the author of a cybertext will certainly employ both outside- and inside-technê when choosing or creating the elements of its story, as well as *dispositio*, insofar as a structure has to be defined in which those elements show themselves. Yet, the recipient (the player) assumes an active role in re-creating the story through their actions in a way that exceeds the mere creation and continuous adjustment of mental images, which ancient rhetorics does not account for.²³⁵ In *Adventure* those actions are the commands typed while interacting with the cybernetic agent; in 3D video games those are the actions executed by the avatar, invoked by the player's control of keyboard, mouse, or controller.

234 This is not to say that all 3D video games feature interpretables which facilitate narratives.

235 The same point can be made with regard to *elocutio*, *actio*, and *memoria*. *Elocutio* might be equated to the process wherein the cybertext mechanics are defined. While *actio* and *delivery* are less prominent in writing (compared to the spoken word), they might be redefined for cybertexts as the parts in which the author skillfully defines the aesthetics of the delivery (*actio*), and the actual implementation so as to make the most efficient use of the available technical media (*memoria*). However, none of those take the recipient's (or the cybernetic agent's) activities into account.

5.3 Narrative guidance, closure, and perspectivity in cybermedia

If I were to follow Aarseth, I would conclude: "Since without a user there can be no action (*praxis*) in a determinate cybertext, the concept of story (*fabula*) is meaningless. [...] Although there is a narrator, because of the narratee's significant interruptions there can be no narrative, only narration."²³⁶ This is to say that, even if followability in cybermedia is maintained, the activity that is the narration will not reach a conclusion and thus become a narrative. At the most, it can be hoped to reach (necessarily unsatisfying) closure. While it must be conceded that the nature of narration in determinate cybertext and its corresponding recipatory attitude is certainly different from both linear and hypertext, I disagree with Aarseth on this point. In order to lay out how a very particular kind of narrative, that is, a very particular kind of a) followable narration that can come to a b) conclusion to which one can ascribe a c) degree of verisimilitude, can be fostered by cybermedia, I will now finally come back to the twice deferred argument for a certain conformity between cybermedial and historiographical meaning-making, and thus a particular suitedness of *cybermedia* for the conveyance of historical understanding.

In a preliminary step I will finally have to give due to a distinction from which I refrained so far, the distinction between cybertext and cybermedia. I have called the reception of hypertext somewhat chimeric due to it mixing the precise, discrete mode of *telling*, based on the symbolic signs of the informative aspect, and the ambiguity introduced by the jumps, which requires recipients to momentarily switch into an unmediated mode of *showing*. (The cognitive effects and their up- and downsides will be touched upon in the next section.)

In contrast, even a determinate *cybertext*, based on symbolic signs, will most likely leave the recipient in a mode of active participation in the construction of meaning, both because of them being addressed with the pronoun 'you', and because of the constant back and forth between recipient and cybernetic agent. It is precisely the action 'in' the cybertext that sets their reception further into the mode of *showing*. While especially *cybertext* role-playing games were modestly successful until the mid-1990s, 3D-based adventure games have since reached a much larger audience. Yes, the growing popularity of digital games at large, along with ever-increasing processing power of PCs and consoles, brought all kinds of 3D-based video games in which the player assumes strategic responsibility for a character (e.g. first-person shooters, racing games, simulations of various kinds) into the mainstream. And yes, many of those games do not (predominantly) rely on storytelling, but rather highlight the game's mechanics and the player's dexterity and skill in interacting with them.²³⁷ However, my argument is that *cybermedia*, insofar its semiotic modal-

236 Aarseth 1994, 774

237 c.f. the aforementioned distinction between games of emergence and games of progression (Juul 2002 & 2005).

ity relies predominantly on pictorial thinking, lends itself more naturally to storytelling dominated by the mode of *showing*: The different iconic and indexical signs received from the respective medium will have to be set into relation by the recipient in a way that resolves their inherent ambiguity with an inescapably contingent, yet acceptable conclusion.

A very similar model has been used by Ricoeur to describe how a historian, following the constructivist approach, would form a narrative from the heterogeneous elements of the past. One might say that, in this sense, a historical narrative is also expected to *show* how its elements had to lead to the conclusion put forth in it, even though it will require ancillary explanations. The most obvious problem when trying to apply a hypermedial reception process to historiography is that a layman recipient of a historico-hypermedial narrative, in contrast to a historian, will not have all the analytical tools at their disposal to ensure any strong degree of *verifiability*. They might thus be compelled to conclude whatever appears to 'emerge' from that unfolding narrative.

5.3.1 Guidance

I would argue that at least this volatility of interpretation can be contained by proper interpretative guidance by the cybernetic agent, even within pictorially dominated media. In fact, creators of all kinds of audiovisual media have a large set of tools at their disposal to convey rather precisely to their audience how the (otherwise ambiguous) signs are supposed to be understood. Consider Mike Rugnetta's account of the television show *The People v. O. J. Simpson: American Crime Story*:²³⁸

I can't help but notice that the camera works tirelessly, telling the audience how to feel about Robert Kardashian or O. J. It tells us which interactions are highly charged or overly tense. Lacking a text narrator the show adds one back in with cinematography to subtly 'fill in the gaps'.²³⁹

The particular narrative 'perspective', thus conveyed to the recipients, is all the more important since *The People v. O. J. Simpson: American Crime Story* is of course a retelling of the real events around the O. J. Simpson murder case, and not just a fictional story. While accusations of bias toward a certain interpretation of these events could simply be deflected with reference to artistic freedom, the same can not be claimed for television news. Yet, the use of similar narrative techniques in this field is not only possible but increasingly prevalent: In comparing the coverage of the Watergate crisis around Richard Nixon in 1973–74 and the impeachment of Bill Clinton in 1998, Geoffrey Baym found that the use of both images (still and moving) and audio (as sound bites) shifted from a presentation where they would "appear as unmediated, directly apparent" to

238 Murphy et. al., 2016

239 Rugnetta 2016

one where they "are overtly mediated, constructed for audience appreciation."²⁴⁰ To illustrate this, he

"gives the example of one shot of Clinton beginning with a close-up of a portrait of George Washington, the US president credited with having said, 'I cannot tell a lie.' The camera then zooms out to reveal President Clinton, whose 'problem with the truth' was by then a central topic in the news [...]. The meaning is obvious but is also clearly constructed; this is not 'just the facts', the claim of traditional journalism."²⁴¹

To conclude:

1. *Cybermedia*, as opposed to *cybertext*, lends itself more naturally to narration dominated by the mode of *showing*.
2. Receiving narration thus dominated by pictorial thinking can arguably be aligned with the activity of historiographical emplotment, in that it 'grasps together' heterogeneous and ambiguous elements into a comprehensive overview.
3. There is no reason to principally assume a missing degree of 'guidedness' in narration that is not dominated by symbolic signs. Different media afford different tools to guide their recipients to desired conclusions.²⁴²

3.5.2 Closure and perspectivity

Two points remain to be answered: Whether, and how, can cybermedia facilitate the narrative closure denied by Aarseth? Whether, and how, can a sense of 'critical inquiry' be mediated to the layman recipient of that narrative?

As to the first, one might simply speak from experience and point to the manifold examples of video games that evidently do tell linear, nonlinear, or entirely emergent stories. Audiences might have divergent preferences for either of these kinds of games, and debate whether certain game mechanics match the respective 'style' of storytelling, but there is no doubt that narrative closure can be achieved even in video games with widely ramified and, at first glance, entirely contingent narratives. At least the first two games in the Assassin's Creed series and all installments of the God of War series are instances of such cybermedia, classifiable in this way as having linear stories, i.e. having linear interpretable aspects. However, this intuitive understanding of a cybermedial capacity for storytelling says nothing about the underlying interpretative mechanics, and does therefore not allow for any inferences for their suitedness for historical storytelling either. What ever those interpretative mechanics are, it should be obvious that historical storytelling in cyber-

240 Baym 2004, 286

241 Huisman et. al. 2006, 151

242 Geoffrey Baym explicitly makes the distinction between 'mimetic' and 'diegetic' with regard to *images* in television news. This is by no means a contradiction to what has been said hitherto, because those are categories of communication in general. Outside of Plato's strict conception of mimesis and diegesis, the methods to employ those in different media will have to answer to their respective peculiarities.

media must remain determinate in its interpretable aspect if any truth claim is to be made. This does not necessarily mean that its story must also be linear. However, cybermedia (and cybertext, for that matter) with indeterminate interpretable aspects, either stemming from dynamic plots created by the cybernetic agent, or from emergent social behavior like in TinyMUD, should be outside of this thesis' focus.²⁴³

My answer to the second question, that for the capacity of cybermedial storytelling to facilitate perspectivity and thus critical inquiry, builds on Ricoeur's and Bruner's elaborations of the nature of narratives and its ties to a human understanding of the world we live in. Most of those have already been laid out in this thesis, but it is Ricoeur himself who draws conclusions from his earlier work in an essay called *Life in Quest of Narrative*, which seem to be most eligible to support my argument. It is this:

Humans organize not just events of the past, but their very own experiences and the contingencies of life into narratives, and thus render them both intelligible and psychologically bearable. Cybermedial, that is, interactive storytelling, does resemble those experiences more closely than other modes of storytelling, and can thus be called more life-like. It is therefore that the same mechanisms that we use when organizing experience, for better or worse, will apply when receiving those narratives.

To show how Ricoeur's *Life in Quest of Narrative* can be aligned with interactive storytelling in cybermedia, I will have to reiterate a number of points taken from him and Bruner in chapter 3 Making sense of the past about the relation between narrative and human experience of time:

Ricoeur's notion of emplotment is not reserved to historical events. It mediates between the heterogeneous events that are imposed upon us, and there is no reason to doubt that an understanding of cybermedia does not employ that very same activity. Even in symbol-based narratives of written text, those elements are re-created in the recipient's mind (cf. Kintsch).

A narrative cannot be without a narrator, and thus not without a perspective. 'Perspectivity' was named as the last of Bruner's four grammatical constituents of narrative, employed by Emily to mark contingent conclusions as stemming from her own 'epistemic perspective'. Those conclusions have to belong to a narrator; they cannot arise incidentally from the mere succession of events. In order to facilitate narration, perspectivity has to be established in cybermedia as well, hence the role-playing user functionality being so dominant. By extension, it is warranted to conclude with Ricoeur that the faculty to incorporate 'critical discontinuity' into 'narrative continuity'

243 There are, of course, other kinds of cybermedia that might not be called video games, and those that might be video games, but without any narrative capacities. Potential for historical education can even be found in the latter – real-time strategy games in a historical setting come to mind, conveying understanding of societal development, strategies for allocating resources, and warfare.

is also given in cybermedia.

Just like with any other narrative, the capacity of cybermedial narrative to be followed springs from it presenting a "world in which it would be possible to live."²⁴⁴ Recipients will employ Ryan's 'principle of minimal departure' and assume similarity with their own reality, unless overruled by the medium. However, the recipient might have greater freedom of interpreting that world in pictorially dominated and/or nonlinear narratives. Depending on the level of guidedness they might be restricted to a perfectly linear narrative (like in *God of War III*), or they might be given complete interpretative freedom, even to the extent that mimesis₂ could fall entirely to them. In either case, the 'components capable of figuring' are still strictly controlled by the cybermedium.

Nevertheless, the perspectival mode we assume to extract meaningful conclusions from contingent events is fundamentally our own, both for the life *in* which we live, and the fictional worlds *in* which our *player-character* lives.²⁴⁵ It can be set in opposition to 'proper texts', in which "it is the author who is disguised as the narrator and who wears the mask of the various characters and, among all of these, the mask of the dominant narrative voice that tells the story we read." There is no such author in cybertext or in (real) life, yet it is not us who can (autonomously) choose the 'components capable of figuring' a narrative. "It is in this way that we learn to become the narrator and the hero *of our own story*, without actually becoming the *author of our own life*."²⁴⁶ The same applies to cybermedia with role-playing user functionality.

Finally, this point by Ricoeur can be used to refute Aarseth's assertion that there can be no narrative closure in determinate cybertexts: We can, in fact, extract a 'figure from a succession' even though we are a) necessarily involved as actors in that succession's creation without b) having complete control over it. Yes, the concept of *fabula* becomes meaningless as long one defines it rigidly as the narrative's *predefined* elements, chosen by the author (and no-one else) at the

244 Ricoeur 1991, 26

245 One a side-note, the limits of what constitutes that 'world in which it would be possible to live' can arguably be stretched quite far. A number of examples that allow for a very generous interpretation of the role-playing user functionality shall be named here, although I will not otherwise look into their utility for the effort of this thesis.

Worlds like in the video games *Portal* or *Braid* are utterly unlike our own in terms of how their game world is constituted, and therefore also in terms of the actions they require in that world. In *Portal*, space works differently, because the first-person player-character creates the eponymous wormhole-like portals to solve puzzles, thus generating all kinds of physical manipulations that are not possible in the real world. *Braid*, in contrast, is a side-scrolling 2D game in which the third-person player-character can manipulate time while certain objects and the player-character himself are sometimes immune to this manipulation. Both games present worlds that are different from ours in a very fundamental sense, and yet they afford an interpretative scope that relies on the perspectivity of a player-character.

An even more peculiar example are real time strategy games like *The Settlers* or *Age of Empires*, where the user inhabits the role of an unembodied, omniscient agent leading the exploration and/or development of a tribe or civilization. In those games the perspectivity of a story that could be told about the game's events cannot belong to any one being made of flesh and blood. Tasked with naming that agent holding the perspectivity and enumerating some of its properties, one would have to resort to such cloudy concepts as the 'spirit' or the 'collective identity' of that tribe or civilization.

246 Ibid, 32

moment of *inventio*. If one wanted to reconstruct a notion of *fabula* that Ricoeur could espouse, it would be more akin to that of a *post-hoc* selection of elements, which might be re-arranged and re-interpreted as we move through our life, or through the cybermedial narration. The conclusions we draw from this configuration will then necessarily be encumbered with a degree of preliminary and uncertainty – which is exactly the moment at which perspectivity, and thus critical discontinuity, must be employed.

I would argue that in this way, cybermedia can facilitate a mediation and interpretation of the past that is both verisimilar and veracious. The verisimilitude stems from all the properties of cybermedia that make us employ the very modes of interpretation which we also employ in real life. Those have just been enumerated. The veracity stems from the capacity of the cybernetic agent, and by extension the medium's author, to a) provide the recipient with the expedient narrative elements and events, and b) to guide them so as to arrive at historiographically favorable conclusions – which will still be perceived as their very own.

This model has a conspicuously open flank, one that e.g. Clyde et. al. would be quick to make out: Verifiability, which in conjunction with veracity is the hallmark of their *truth claim* of any historical narrative, does not occupy any integral function here. As apprehended earlier in 5 Non-linear narration and historical narratives, because the user would employ their own perspectivity, facilitated by the role-playing feedback function, they could in fact also view the conclusions' verifiability as entirely omittable. This would veer an interpretation of the past resting (only) on the recipient's "own experience of the evidence or arguments"²⁴⁷ slightly further into the direction of deconstructionism.

Those are hazards that cannot be negated. However, I would argue that they are fundamentally inherent in narration as the form for historical understanding. Yes, a layman recipient will unlikely form any 'evidence relationships' in a scholarly, that is, somewhat verifiable way; that is to say by means of Ricoeur's *causal analysis* and *rational explanation*. If, alternatively, one wanted to present to the recipient a veracious *and* in this vein verifiable account of the past, it would require a linear narrative 'in which' they were not involved by mode of action. This way we would have to forego the utility of the recipient's own perspectival stance, evoked by the role-playing user functionality. A choice has to be made between risking a – to some degree – skewed interpretation of the past that is nevertheless marked as such by the recipient's own stance, and retaining an interpretation that is canonical, but likely unscrutinized. I see two reasons for the former option to be preferred in the context of cybermedia:

The first one is a question of principle – an understanding of the past always requires interpretation. It does not 'reveal' itself once all the heterogeneous elements are laid out in the appropri-

247 Clyde et. al. 2012, 7

ate way, because there is no one such way. There are only more or less valid, that is, more or less defensible interpretations. As has been said, a 'testable' *truth claim* like in the nomological sciences is not attainable by historiography (c.f. 3.3 The epistemology of narratives). This stance does not fall into the approach of deconstructionism, as Ricoeur has argued convincingly: "Contingency is unacceptable only to a mind that attaches the idea of mastery to that of understanding."²⁴⁸ Appreciating this 'interpretedness' is paramount for a willingness to engage in open inquiry to determine the level of verifiability of the respective interpretation. Contrary to the stance put forth by Clyde et. al., I propose that his approach must not be reserved in principle to scholars; it is in fact just as important to foster the same appreciation in any layman recipient of historical narrative, so as to prevent interpretations that either rest too rigidly on the scholars' authority, or fall into the arbitrariness of a deconstructionist and postmodern view of the past.

The second reason rests on a pragmatic consideration: Some degree of interpretative freedom has to be granted to recipients to allow for their perspectival stance. Cybermedia, or more specifically the cybermedial agent who can guide the reception among the desired normative conventions, should be able to facilitate that freedom without compromising a constructionist approach to historical understanding. The cognitive and semiotic qualities of medial reception that can be employed to this end have been laid out earlier in this section. This is still a very vague statement, but it loses its radical semblance when one looks at practical examples:

In museums and especially in open air sites, symbols are already employed which rely on pictorial thinking, even if their interpretation is guided by the more rigid digital system of language. However, whenever one relies on the former, one has to take a certain level of interpretative freedom into account. Ephesus and Troy, by their mere presence, will feature this mode of thinking (to one degree or another) already, whether there is interpretative guidance present or not. The German Emigration Center deliberately aims to invoke the visitor's own palpable experiences by using iconic and indexical signs, like a tilted, cranking wooden floor 'under deck' during the passage, the subtle sound of a heartbeat in the corridor outside of the emigrant inspection station that is modeled after the one on Ellis Island, or the museum's very admission ticket which doubles as an emigrant's ticket to the New World. Those experiences can then be used as a "measuring tape"²⁴⁹ to gauge the significance of the respective situation for the respective emigrant. This comparability, however, "requires non-identity"²⁵⁰ with the emigrant, which in conjunction with the symbolic signs provided in the museum does arguably facilitate a constructionist approach to history in the visitor.

248 Ibid., 150

249 Christoph Bongert, exhibition curator of the German Emigration Center, in conversation with the author on 2016-01-04.

250 Ibid.

Apart from these practical examples, in the next section I will attempt to delineate a very limited number of persuasive tools that can be more directly derived from the properties of hypertext and cybermedia, which could be used to facilitate the interpretative guidedness.

5.4 Persuasive tools

The persuasive tools available to any author must necessarily differ for every medium and could be laid out separately for each individual medial implementation in principle. This section will only delineate those tools that come to the fore in hypertext and cybermedia, as it can be said that the burden of feasibility lies more obviously on those rather than traditional (read: linear) media, and because it seems obvious that with new media configurations there will also be new such tools that have to be explored.

5.4.1 Hypertext

Since not only the interpretable's re-discovery, but also the informative's re-creation in hypertext is ultimately the domain of the reader (with Liestøl: the secondary author), there might be no methodology to guarantee a reception along the lines of Ricoeur's *emplotment*, which would in turn ensure the constructionist approach to historical narrative. However, in an attempt to redeem hypertext for the effort of this thesis, at least three properties can be exploited:

1) Affordances of local and global coherence

Since the aforementioned self-referential or idiosyncratic mimetic activity is brought about by the reader's inside-technê aspect of *inventio*, it should not be given too much leeway. Speaking with Elleström, the 'stringent' reception necessary for a historical narrative in hypertext should be encoded in the operational qualifying aspect. The two most obvious measures to accomplish this might be: Composing scriptons that are locally coherent, but can also be linked (syntagmatically) to a number of other scriptons; and only placing links at the very end of scriptons, so as to encourage the reader to first complete the current scripton before wandering off to the next. Additionally, there might even be a way to encode a requirement in the hypertext's traversal function to first finish reading one scripton before being able to proceed to the next.

2) Expectations of coherence

There is good reason to believe that readers will, by and large, expect to find narrative coherence in the interpretable. Ralf Schneider characterizes the reading of prose in general as a cognitive process "in which operations of inferencing provide grammatical and logical connections between

phrases or sentences and resolve anaphoric references, so that local and global coherence between the passages just read can be established." The thus formed "knowledge structures" are then used "so that implicit hypotheses as to incoming information are established."²⁵¹ This is congruent with Ricoeur's delineation of the reading process.

In his examination of the particularities of the *hypertext* reading activity, Schneider then describes how participants of a study by Dobson and Miall reported a sense of disorientation and "fear of losing track" that coincided with slower reading speed. He attributes those to the higher cognitive load of "keeping tentative versions of a situation model active over a longer time, until incoming information will support one variety."²⁵² Both suggest that the "mind's powerful need for coherence," a commonplace notion in cognitive sciences, is also prevalent in hypertext reading.²⁵³

This finding also suggests that the risk of the recipient employing a – to some degree – idiosyncratic mimetic activity is somewhat mitigated by the need for coherence. In opposition to cybermedia, where this is a function of the recipients perspectivity and thus footnoted as such, the sort of coherence that Schneider points to is still expected to be maintained by the hypertext's author.

3) The utility of disorientation

One cannot but notice the congruence between the pattern of cognitive processes, triggered in the face of apprehended incoherence, and the constructionist approach to historiography as laid out by Clyde et. al. Schneider describes how the just mentioned knowledge structures "are kept active as long as possible, following a principle of parsimonious use of processing capacities." This is likely done in a more conscious manner in hypertext (compared to linear text) since "choosing links may in fact merely activate additional self-monitoring thought processes."²⁵⁴ Seeking textual coherence in this context is akin to "analysing how and what individual pieces of evidence can do, and what conclusions [...] can be established through evidence relationships."²⁵⁵

The parsimonious use of processing capacities might also be aligned to the process Ricoeur called *causal analysis*: Only the knowledge structures that appear to be 'really necessary' and best suited to explain the unfolding of the narrative will be kept active (cf. 3.3 The epistemology of narratives). The aforementioned oscillation between the precision and directedness, present in the

251 Schneider 2005, 200

252 Ibid., 201

253 Ibid.; cf. also Dobson & Miall, 1998. Two caveats have to be made: First, the study partly attributes the slower reading speed to the hypertext's presentation on a computer screen. Considering that the study was conducted in 1998, one can assume that this negative influence of the means of technical presentation will be reduced due to more modern devices. Second, part of the disorientation was due to the comparatively short scriptons and the framing of each as a closed off unit from the next. This is obviously no fixed property of hypertext. As argued in item one of this list, it should instead be regarded as a conscious design choice.

254 Schneider 2005, 200. This is not to be equated to aforementioned recipient's perspectival stance in cybertext, which relies on the their active participation 'in' the text.

255 Clyde et. al. 2012, 7

act of *telling* each scripton, and the ambiguity and incompleteness imposed upon the recipient with each jump, will draw attention to their active participation in the construction of meaning.

It is at this moment where the hypertext author has to forestall potential assumptions by the reader, necessarily drawn from their respective cultural background by the principle of minimal departure. To reiterate the wager from *rational explanation*, Ricoeur's second mode of explanation: "If *y* is a good reason for *A* to do *x*, then *y* would be a good reason for anyone sufficiently like *A* to do *x* under sufficiently similar circumstances."²⁵⁶ A non-scholarly audience cannot always know what this sufficiently similar context for the rational explanation might be, so it must be provided by the author.

To summarize, disorientation in hypertext can and should be used, however carefully, to make the reader more akin to a 'secondary historian' in the constraints encoded by the author. How this should make for a more engaging learning experience and foster better knowledge retention has been shown in sections 3.4 Narrative vs. nomological understanding and knowledge retention and 4.3.1 The technical configuration of dynamic media and its effects.

5.4.2 Cybermedia

As stated in section 5.3 Narrative guidance, closure, and perspectivity in cybermedia, the main challenge that persuasive tools in cybermedial historical narration have to address is to allow for a recipient to arrive at their own perspectival yet nevertheless veracious stance in a compelling way.

One way to achieve this is a careful mediation (executed by the cybernetic agent) between the two poles of Bruner's "canonicity and exceptionality."²⁵⁷ Since our folk-psychological understanding seeks canonicity, we can use deviations from it to challenge and let the recipients 'discover' historical explanations. According to Bruner, this is (quite conveniently) the very moment which makes those experiences satisfying, because they "achieve their meanings by explicating deviations from the ordinary in a comprehensible form."²⁵⁸ Exceptionality, the unknown, is therefore a prerequisite of any good narrative, as long as it can eventually be explicated and thus be returned to the realm of (known) culture.²⁵⁹

This "capacity of literary fiction to unsettle readers' expectations and challenge their thinking"²⁶⁰ has also been attributed to Roland Barthes' *writerly* text. It is opposed to the *readerly* text,

256 Dray 1957, 132

257 Bruner 1990, 47

258 Ibid.

259 To reiterate: By doing so, the explication will necessarily be incorporated into the realm of culture and therefore change it to a minute degree.

260 Kidd & Castrano 2013, 377. 'Literary literature' is used here in opposition to 'genre literature', which is commonly referred to as the kind of literature that does *not* challenge its readers. Even though this definition seems murky and somewhat elitist (like the notion of the *writerly* text itself), Kidd & Castrano succeeded in establishing a clear dichotomy between those types in terms of their psychological impact on readers (2016).

in which the recipient "is left with no more than the poor freedom either to accept or reject the text: reading is nothing more than a *referendum*."²⁶¹ I have argued in an analogous manner against interactive historical narratives that do not challenge their recipients and do not allow them to form their own stance. In short, I would say that historical narratives in cybermedia should never be entirely *readerly*. However, they cannot be entirely *writerly* either since this sort of text is very much the (possibly Utopian) ideal of a

perpetual present, upon which no *consequent* language (which would inevitably make it past) can be superimposed; the writerly text is *ourselves writing*, before the infinite play of the world (the world as function) is traversed, intersected, stopped, plasticized by some singular system (Ideology, Genus, Criticism) which reduces the plurality of entrances, the opening of networks, the infinity of languages.²⁶²

Leaving aside the question of whether a truly and wholly *writerly* text can be composed (more precisely: some medium that facilitates a fully *writerly* reception) at all, it can be said that for media with historical narratives all the constraints of historiography still apply and will necessarily make them fall short of this ideal.

The notion of the *writerly* text bears utility here because attached to it is the effect of *defamiliarization*. Originally introduced by the Russian formalists as a distinguishing quality of literary texts,²⁶³ it has since been shown that this effect is in fact evoked by texts with a degree of writerliness. There seems to be more than one quality of media (not only texts) that can defamiliarize the recipient. Kidd & Castrano cite the cognitive literary theorist David Herman, who proposes that the "processing of narratives is more complex when they inhibit what might be termed the naïve application of [psychological] scripts and promote instead reflection on the limits of applicability of the scripts being invoked."²⁶⁴ A rather vague statement, but one that is consistent with Bruner's distinction between canonicity and exceptionality, and one that furthermore should serve to facilitate Ricoeur's 'critical discontinuity'.

At least a few more specific tools used to defamiliarize the recipient can be pointed to: One is "the systematic use of phonological, grammatical, and semantic stylistic devices."²⁶⁵ This has, however, only been shown in the context of 'visual literature' (c.f. Elleström) and therefore pertains to the symbolic signs of language. It is not immediately obvious if and how it could be applied to pictorial semiotic signs, but language can of course be part of any cybermedium as well. This quality might therefore already be given when the medium presents, for instance, a historical character (real or fictional) that speaks (audibly or presented via visual text) to the player-character in an anachronistic dialect. The German Emigration center uses a number of audio exhibits

261 Barthes 1970, 4

262 Ibid., 5

263 Huisman et. al. 2006, 31

264 Herman 1997, 1054

265 Miall & Kuiken 1994, 15ff.

where visitors can listen to excerpts from emigrants' diaries which are narrated in strong, anachronistic dialects.

Another quality that can defamiliarize the recipient is the presentation of so-called 'round' (rather than 'flat') characters, which "cannot be readily understood in terms of a particular schema, and thus readers must consistently attend to cues to their mental states."²⁶⁶ Kidd & Castrano show in a series of experiments in two studies how reading literary fiction, which typically features such round characters, fosters affective and cognitive Theory of Mind. The former is the "ability to detect and understand other's emotions," while the latter is "the inference and representation of others' beliefs and intentions."²⁶⁷ They do therefore "propose that by prompting readers to take an active writerly role to form representations of characters' subjective states, literary fiction recruits" Theory of Mind.²⁶⁸ They also point to a number other studies that show the same effects in "nonviolent video games" and "acclaimed TV dramas," and possibly also other nonfictional media.²⁶⁹ Not just visual literature, but media with a degree of writerliness in general, therefore seems very well equipped to, in effect, evoke Ricoeur's mode of 'rational explanation'.

For historical narratives the 'roundness' of characters, that is, their "implied (rather than explicit) sociocognitive complexity,"²⁷⁰ could simply be invoked by presenting 'historically accurate' decisions that a person might have made. Moreover, in cybermedial historical narration the player-character should only be given space for such 'historically accurate' decisions – especially if they seem (only initially, one must hope) implausible to the modern recipient. For Troy and Ephesus, one obvious source for such seemingly implausible decisions could lie in superstitious behavior from that period, which could be woven into an otherwise mundane narrative thread.²⁷¹

When it comes to defamiliarizing the recipient by using pictorial rather than symbolic signs (of language), I want to propose an approach that should in fact hold the solution to two challenges at once.

First, David Herman has just been quoted in attributing to defamiliarization the capacity to 'inhibit what might be termed the naïve application of scripts and promote instead reflection on the limits of applicability of the scripts being invoked'. The kinds of 'scripts' which need to be inhibited in their application are e.g. scripts for the interpretation of visual and auditory elements of the medium. How can this be achieved? Second, a problem with the recipient's uncritical stance toward the 'closed construction' that is a cybermedium had been identified early in 5 Nonlinear narration and historical narratives and then deferred to this very section. In open-air sites (like

266 Kidd & Castrano 2016, 475

267 Kidd & Castrano 2013, 377

268 Ibid., 379. The results were then reproduced in greater detail in Kidd & Castrano 2016.

269 Kidd & Castrano 2016, 484

270 Ibid., 483

271 See Riess 1895, and Violatti 2016 for examples of superstitions in ancient Greece.

Troy and Ephesus), it can cause mobile applications "to take precedence in the visitor experience, but users may actually come to cultural heritage sites with expectations that this is meant to happen."²⁷² This would be tantamount to the interpretation (a history) masking the interpreted (the past) and thus diminish the space for critical inquiry. The answer to both challenges lies, in the context of open-air sites, in using augmented reality to set the (digital part of the) cybermedium into a dialogue with the physical site. That is to say, the historical interpretation presented pictorially through a digital device should always rely, to one degree or another, on the physical 'backdrop' of the actual site, and never replace or overwrite it. It can, however, present (seemingly) conflicting information and thus highlight the difference between the past and its interpretation. To give one simple example: The vast meadow that spreads out at the foot of the mount on which Troy was built used to be a natural harbor which is now silted up. An augmented media application could overlay this meadow with ships, even though they could obviously not exist there in the present day anymore.

Finally, one side-note shall be made to distinguish between defamiliarization and disorientation, which I purposefully located in different sections of this chapter. Some literary critics have drawn a connection between *hypertext* and the *writerly* text.²⁷³ One must not look very far to find reasons why:

In this ideal [of the writerly] text, the networks are many and interact, without anyone of them being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one.²⁷⁴

This could be easily read as a description of the *structure* of hypertext. However, I am at least skeptical about hypertext's capacity to be inherently cut out for *writerly* texts, whereas I see that potential in cybermedia: In the latter, the role-playing user functionality will mark the just described contingencies as belonging to (the experience of) a continuous subject which is the player-character. Hypertext lacks the this feature and will likely only disorient the recipient and lead them to assume that they did not chose a fitting sequence of scriptons in the face of an unsettling, that is, potentially *defamiliarizing* experience.

6 Conclusion and Discussion

The effort of this thesis has been to define the semiotic qualities of any given medium to effec-

272 Akrivi et. al. 2016

273 c.f. Kilfeather 1996, 43

274 Barthes 1970, 5

tively convey or facilitate a veracious interpretation of the past. A tension between that sought *veracity* and *verisimilitude* as well as *verifiability* has been identified. A number of causes have been identified in which this triad of qualities can be grounded. To understand the entanglement of the three qualities and the intricate ways in which they interact, each cause had to be examined closely:

The subject of historiography, namely the past, due to which knowledge can only be created in the mode of retrodiction; folk psychology, which, in order to orient a human agent in the spatiotemporal condition with situated events, is strongly biased towards the capacity of narration to incorporate deviations from canonicity; the importance of and potential space for nomological thinking within narration and vice versa; the structuring of medial reception through various interconnected modes and modalities; the desired properties of media that allow for a historically sound presentation and interpretation of the past, especially with regard to the involvement of the recipient.

By taking those underlying causes into consideration, I have attempted to parsimoniously sketch a theory from which one can derive a heuristic of tools for mediating history effectively (that is, by means of interactive storytelling). The first necessary step towards that theory was to concede that the tension between veracity, verisimilitude, and verifiability cannot be resolved, at least with said goal of this thesis in mind. These criteria each play an important role, so a medial framework had to be defined carefully, one that could accommodate each criterion in its own right. Different types of media were analyzed and cybermedia was identified as the type with the capacity to meet all criteria.

Other underlying causes could have been considered, but were omitted for the sake of brevity. The first few that come to mind are: reader response criticism from the field of psychoanalytic psychology;²⁷⁵ the concept of "flow" from positive psychology;²⁷⁶ the role of human playing in culture and personal development from ludology;²⁷⁷ the conception from Russian folklore studies of narratives as syntagmatic structures in which the narrative elements each serve an identifiable function;²⁷⁸ the underpinnings of playful and artistic expression from psychoanalytical theory.²⁷⁹

Those and (potentially numerous) others would serve to create a fuller picture of what is in fact at play when receiving the manifold forms of medial narratives, which in turn has to be taken into account when creating aforementioned heuristic. They would allow for both a broader theoretical base and for deeper insight into elements of the theory that have already been laid out

275 c.f. e.g. Holland 1989

276 c.f. Csikszentmihalyi 1997

277 c.f. Huizinga 1955 and Caillois 1961

278 c.f. e.g. Propp 2010

279 c.f. Winnicott 1980

here.

So far, the persuasive tools presented above are only few and far between all the other possible and/or necessary rules and tricks that authors/creators have to know to create good historical interactive narratives. I only presented some that can be derived directly from my theoretical argumentation. With a broader base, more such tools might directly be derived from theory. For instance, the concept of 'defensive patterns' from Hollands' reader response criticism might point to valuable insight into where Ricoeur's *rational explanation* might meet its (scholarly defensible) limits. The notion of Winnicott's 'transitional object' might provide some insight into *how* the role-playing user function in cybermedia actually functions psychologically.

The last two paragraphs do again exemplify the multitude of fields and viewpoints from which one can begin to sketch a theory. Having said that, I regard those that I did actually choose to focus on in this thesis as the most fundamental ones. That is to say, I am reasonably confident that incorporating more underlying causes to both broaden and deepen my theory will not require fundamental changes to or impugn what has already been said. I can, naturally, not be certain about this before it is done; amendments will have to be made and are expected.

Additionally, not all of those tools will be educed by a top-down approach from theory to practice. As exemplified by the interspersed perspectives on Troy, Ephesus, and the German Emigration Center, the reverse approach should be just as fruitful, as will a comparative analysis with already existing implementations of and for interactive historical narratives.

For the former, I favor a concept called *critical making*, put forth by Matt Ratto in 2008, which attempts to bridge the gap between theory and practice. It "is an elision of two typically disconnected mode [sic] of engagement in the world – 'critical thinking', often considered as abstract, explicit, linguistically-based, internal and cognitively individualistic; and 'making', typically understood as material, tacit, embodied, external and community-oriented."²⁸⁰

The latter, already existing implementations, can be split up further into two categories: Technological systems that facilitate interactive historical narratives, and practical implementations, partly *within* those systems. Noteworthy technological systems are: The ontology *CURATE* and its implementation, *Storyspace*;²⁸¹ the *CHESS project* (Cultural Heritage Experiences through Socio-personal interactions and Storytelling);²⁸² *SitSim* (Situated Simulations);²⁸³ *meSch* (Material Encounters with Digital Cultural Heritage).²⁸⁴ All of those are also exemplified through imple-

280 Ratto & Hockema 2009, 52

281 Wolff et.al. 2012 and Collins et. al. 2012

282 Vayanou 2014 and Perry 2015

283 Liestøl 2011, 2013, 2014, Liestøl et. al. 2011, Liestøl & Friedlander, 2013, Liestøl & Morrison 2015, and Smørdal et. al 2016

284 Petrell et. al. 2014

mentations in one or more of the cited articles. Other practical examples are: The *Streetmuseum* and *Streetmuseum Londinium* smartphone applications;²⁸⁵ the app *Voices Recognition*, "designed to augment one's interaction with York Cemetery, its spaces and visible features";²⁸⁶ the app *iVisit Anatolia* that uses augmented reality to display four digitally reconstructed buildings in Bergama;²⁸⁷ the app *Luostarinmäki Adventure* which also uses augmented reality to take "a visitor of the Luostarinmäki Handicrafts Museum in the middle of the 1850's daily life in Turku";²⁸⁸ the app *Anne's Amsterdam* which works in conjunction with the Anne Frank House museum.²⁸⁹

To conclude: This thesis presented the first step in an effort to arrive at a comprehensive understanding of the mediation of historical interpretation to a non-scholarly audience. Approaches with the same or similar goals had been made from different practical and theoretical starting points. Although it can never be scientifically exact, this thesis attempted to create a solid foundation from which one can proceed towards the stated goal. Some expedient steps of the process have been proposed in this discussion. My hope is that this thesis' focus on the relation between the past and human psychology and cognition on the one hand, and recently emergent possibilities of medial configurations on the other, will also prove fruitful to connect, or at best unify, the other work that has already been done in this field.

285 Jeater 2012

286 Eve et. al. 2014

287 Architosh 2013

288 Future Technologies - University of Turku 2014

289 Anne Frank Stichting 2012

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