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Novels – A Missing Piece in Electronic Literature? Johannes Heldén’s *Astroecology* Read as a Possible Bit

<https://doi.org/10.1515/ejss-2019-0006>

Abstract: Computers, smart-phones, tablets etc. expose most people to new cultural and artistic practices made possible through digital technologies. Among these practices and objects for scholarly research and analyses is literature – *electronic* literature. The article addresses the increasingly interactive and performative role of the reader and the need for transaesthetic, analytical and methodological approaches to multimodal literature. A brief historical background, the “current” terminology of electronic literature and a short outline of Scandinavian electronic literature are included, before Johannes Heldén’s *Astroecology* is discussed.

Say “literature” and the image springing to mind will likely be a book.
(N. Katherine Hayles, 2009)

Made possible through and closely intertwined with digital technologies, electronic literature termed “digital-born” by N. Katherine Hayles, calls for both basic introductions and new and old approaches to literary analyses. One case in point is the works of Swedish visual poet, author, performer and musician Johannes Heldén (b. 1978). Since his debut *Burner* in 2003, his works have grown, developed and made their ways into well-known websites, publishing houses and scholarly works. Among the former are the *Electronic Literature Collection 1–3* (ELC) by the Electronic Literature Organisation (ELO) and the *Anthology of European Electronic Literature* by ELMCIP (Electronic Literature as a Model of Creativity and Innovation in Practice). So far, Heldén’s most recent and ongoing work *Astroecology* (2016) consists of a printed book in Swedish, English and Danish, an interactive electronic site, a performance at a.o. *Dramaten*, The Royal Dramatic Theatre in Stockholm, in collaboration with the actress Bahar Pars and the band *Wildbirds & Peacedrums*, video- and live talks, music performances, Instagram-updates, exhibitions – and additional entries from his homepage.

Because the aesthetics of electronic works like Heldén’s comprise the literary, the auditory and the visual, some see them as a promising new branch of avant-

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garde experimental literature in literary history. Others see them as a cause for a total transformation that redefines and expands literature itself. While both views to my mind are interlaced, and thus debatable, I shall here focus on the need for transaesthetic analytical and methodological approaches, and the increasingly interactive and performative role of the reader. A brief historical background, the “current” terminology of electronic literature and a short outline of Scandinavian electronic literature are included. First and foremost, however, my objective is to try tracking down what I believe is a missing piece in recent electronic literature: the novel. Whereas generically expanding short-stories and poetry seem to thrive as electronic literature, the “generous” hybrid genre – the novel – is more difficult to find. I shall, however, attempt to read Heldén’s *Astroecology* as a novel, or a novel-like work.

Short Background History and Current Terminology of Electronic Literature

In 1987 professor of English literature Michael Joyce created *afternoon, a story*, the first hypertextual fiction, for his students. This groundbreaking work, published in 1990 on a floppy disk and composed with the software Storyspace, was early on canonized, anthologized, analysed and quoted in numerous books and articles (e. g. Bernstein 2009). So were works by Shelley Jackson, Stuart Moulthrop, Deena Larsen, and Megan Heyward. These predominantly Anglo-American, text-based, multilinear and hypertextual works sent the readers linking away while searching for hidden stories to be unravelled and plots to be clarified in the massive textual nets created by (postmodern) writers and data experts. Today, about twenty of these works are regarded as classics and positioned as the “first generation” Golden Age canon. Around 1995 a second generation of electronic literature emerged (see Hayles 2008). Created with Flash, the “hypermedia” novella *These Waves of Girls* (2001) by Canadian Caitlin Fisher exemplifies this next phase. Combining pictures, animation, sounds, spoken words, it offered the reader a somewhat more challenging interaction at the keyboard and with the mouse.¹ Through clicks and mouse-overs, the reader was invited to call forth and assemble the many colourful and enticing elements into the novella-like text with a beginning, middle and end. In another seminal work, the one-act animated drama *Façade*

¹ The work won ELO’s Fiction award in 2001. Fisher tells the story of a girl growing up to realize she is a lesbian. In general, one could say that most of the Golden Age hypertext fiction share an interest in exploring identity themes, just like good old book literature.

(2005) by Michael Mateas and Andrew Stern, the reader found opportunities for “true” interaction (Ryan 2015, 295–96). Assigned the role as a guest in the home of a couple whose marriage is on the rocks, the reader typed inputs which were assimilated into the story, albeit not always at the right moments and places. Interaction took over, and in the end the story and drama exploded, so to speak!

Despite works like *These Waves of Girls* and *Façade* seemingly offering readers opportunities to have more choices and involvement, the reader ultimately had to realize that her readerly role was unchanged (see Rettberg et al. 2007). She was still directed and steered by the author as well as the programmer’s embedded links, codes and programming languages.²

In Europe – and Germany in particular – one saw a somewhat different development. Roberto Simanowski, who in 1999 initiated *dichtung-digital.de*, a “Journal für digitale Ästhetik”, argues that the German “market”, its writers and readers have never really been influenced by “pure” hypertext and Storyspace writings. In “When Literature Goes Multimedia” (2002) Simanowski lists two types of German electronic literature: the first favours interactivity, deriving from the ideology of collaboration, while the second, rooted in the idea of the Wagnerian “Gesamtkunstwerk,” explores the multimodal power of the digital realm (I shall place Heldén’s works in this second type). Simanowski’s own example of this second type is Urs Schreiber’s by now almost inaccessible *Das Epos der Maschine* (1998), first introduced at *dichtung-digital.de*.

The plethora of terminology (digital, interactive, network incl. subdivisions etc.) referring to multimodal and multimedia literature indicates the challenges electronic literature poses. It took print literature around 100 years to assume its Western patterns of captions, chapters, sections, etc. that lead us to read from left to right. Thus, it should not come as a surprise that descriptive terms for electronic literature so far seem to have been chosen randomly or been created ad hoc in order to embody the special traits of individual works.

A term that has gained some ground is *electronic literature* (“e-lit” in the following), which has been promoted by ELO. Hayles, who was co-editor of *ELC1* distinguishes between *digitalized* and *digital-born* literature: If nothing “happens” to the text (e. g. an e-book) during the process of reading, it is a digitalized text and not “digital-born” electronic literature (2008).³

² Very few think about the underlying layers of codes and programming. What we see, the computer screen, is what is called the interface. Using a mouse or touchpad – and clicking, the reader exchanges information with the hard- and software. With touchscreens, the exchange between receiving and sending has become more direct. It should be noted that I write about electronic literature from and at this surface level – the screen and interface.

³ Entries on both e-lit and digital literature are found in *The Johns Hopkins Guide to Digital Media*.

By applying different terms to what first appears to be formal descriptions of their objects of research, scholars focus on different aspects of e-lit discussing the “nature” of literature, as well as the poetics and literariness of e-lit – whether they are analysing computer games or something closer to “old-fashioned” book genres.

At the beginning of the Golden Age of hyperfiction, authors used familiar generic markers adding the term ‘hypertextual’ to describe their novels, novellas, stories, etc. This was also used by the second generation of works, such as Fisher’s hypermedia novella *These Waves of Girls* (2001). In addition, authors would include intertextual references to, for instance, canonical books that framed and inspired their own works. What looked like storylines and well-known existential themes would guide the perceptual and cognitive reading processes. Today’s transaesthetic multimedia literature, however, has become more difficult to assess and analyze. The reader herself has to take a generic stance on literariness and the literary each time she encounters “literature projects”, e. g. ranging from *Screen* by Noah Wardrip-Fruin (2002) (a 3D interactive virtual environment where the reader or user wears headgear and glove-gear), the installation *Text Rain* by Camille Utterback and Romy Achituv (1999), the kinetic, algorithmic *_the data[h!][bleeding texts_* (2000) by Mez (Mary-Anne Breeze), and Heldén’s multi-modal work *Astroecology*.

E-lit and the Literary

The abovementioned works *Screen*, *Text Rain* and *_the data[h!][bleeding texts_* are included in the *ELC*, which is freely accessible online and consists of so far three volumes with about 240 entries. The works call for taking a position in the ongoing discussion about what constitutes the literary, representing multiple modalities, genres and sub-genres.⁴ The first volume of the *ELC* was published in 2006 and was also included on a CD-ROM in Hayles’ *Electronic Literature. New Horizons for the Literary*.

The subtitle of the book indicates the literary as a common denominator, most of the works in *ELC* complicate the *literary*, since they position themselves at the

⁴ In volume 1 of *ELC*, 16 works are defined as fiction and/or hypertext. In volume 2, three are defined as interactive fiction, 11 are marked as hypertexts, 15 as narrative, 16 as visual poetry or narrative (some are, however, repeated under different headings). Volume 3 lists some of the same entries under different headings. 16 entries are described as visual poetry narratives, 15 as narratives, 20 as hypertexts, three as interactive fictions, two as e-mail based works, and 54 under the heading “poetry”.

intersection between technology and textuality, literature and art. A third of the works “have no recognizable words”, while all have “important visual components and many have sonic effects as well” (2008, 4). Hayles mentions that the term was chosen “to raise questions about the nature of literature in the digital age, to see the works as creative artworks that interrogate the histories, context, and productions of literature, including as well the verbal art of literature proper.” (ibid.). In their 2007 articles both Hayles and Simanowski discuss how much text or how many traits from print literature a work should have in order to be defined as “literature proper.” *Screen* and *Text Rain* are cases in point, since both works are based on text.

To illustrate, *Screen* opens with Robert Coover, American author and a member of ELO, reading the following: “In a world of illusions, we hold ourselves in place by memories.”⁵ A text, spoken interchangeably by a female and a male narrator, is displayed on the CAVE’s three walls or screens. The text recounts recollections that slip away despite attempts at holding on to them. While the narrators talk, the words (and consequently the memories) literally start peeling off the walls. The reader uses her body to decode and read what she sees, having the option to counter the falling words by pushing them back up. But in the end, they all lie in a heap on the floor.

Intriguing, epistemological questions like these, often found in print literature, are now intermediated in the CAVE. As the words and sentences are combined into sequences comprising literary elements (such as narrative, defamiliarized language, themes and metaphors), the literary qualities of *Screen* are convincing. To me the formal and thematic issues of this work are close and akin to works of avant-garde experimental literature.

To compare, *Text Rain* is an installation inspired by two poems, Apollinaire’s “Il Pleut” (1918) and “Talk, You” by Evan Zimroth from *Dead, Dinner, or Naked* (1993), but text and words function almost exclusively as visual objects. The “raining” of letters and words mainly gain a literary meaning through the work’s title, its intertextual references, and the observation of the moving bodies in the installation. *Text Rain* and its two “spin-offs” (from 2005 and 2008) are not intended to be “read” like *Screen*. The installation is meant to be watched and/or interactively

5 According to online documentation, Wardrip-Fruin calls *Screen* “an instrumental text,” a subgenre of “playable media” that includes computer games, because “[i]t creates new experiences of text in relation to the reader’s body” (2003/05). In *ELC2*, he calls it “an alternative literary game.” In *The Johns Hopkins Guide to Digital Media* Wardrip-Fruin calls himself author “of machine modulated poetry”. I myself have experienced *Text Rain*, but my knowledge of *Screen* is picked up from *ELC2*, YouTube and from a demo DVD given to me by Wardrip-Fruin, who demonstrated some of his works in Copenhagen 2006.

played with through body movements, thus placing the work generically closer to performative art, or an “interactive installation”, to cite the artists behind the work (Utterback, 1999).

Processes of Reading E-lit

That the language of literature transmits multiple meanings is a well-known fact. Stories and discourses are constructed and/or deconstructed through defamiliarization (Shklovsky’s *ostranenie*), sending readers on a hermeneutical quest for meanings. In multimodal electronic works that include visual, audio, and performing elements, this search also comprises the performance of the text, its animations, graphics, design, and components that result through the processes of interaction. The features of morphing, interweaving and performing words and images, as well as the degree of interaction, present obvious challenges to the reader and her reading process(es). Watching, linking, reading, listening alert one’s perceptive sensory systems, and (may) challenge and interrupt the flow of pleasure and immersion as one reads and tries to understand the work. This very often results in disappointed reader expectations and raises questions of how to react to and understand these works.

Most users of the Internet are, however, at least subconsciously, aware of different reading practices. Terms like ‘users’, ‘spectators’, ‘players’ and ‘readers’ differentiate between our various roles when surfing for information, linking and scanning hits, skimming headlines in web editions of newspapers, or actually – perhaps haphazardly – reading e-lit.⁶ Hayles distinguishes between “hyper attention” (i. e. craving for continuously varying stimuli) and “deep attention” (i. e. willingness to spend hours with a single artefact) as cognitive modes. Both modes are at work when reading e-lit (Hayles, 117–18).

Wolfgang Iser, unremittingly engaged in the “act of reading” (cf. *Der Akt des Lesens* the title of one of his most important works from 1976), describes what literature is and how and why we read:

As we read, we oscillate to a greater or lesser degree between the building and the breaking down of illusions. In a process of trial and error, we organize and reorganize the various data offered us by the text. These are the given factors, the fixed point on which we base our

⁶ Hayles differentiates “readers” (e. g. the users of the first generation text-based hypertextual fiction such as *afternoon, a story*) from “players” when she talks about texts that are interactive and with game-like traits, such as Michael Joyce’s *Twelve Blue* and the works included in *ELC*. I myself prefer “reader”.

“interpretation”, trying to fit them together in the way we think the author meant them to be fitted. (1978, 293)

Iser’s analysis of reading processes is one approach among many, but it succinctly points to the cognitive activities involved.⁷ Cognitive processing is increasingly applied within the humanities. For instance, Mark Turner, cognitive scientist and English language professor, and Douglas Hofstadter, professor in cognitive science and comparative literature, discuss how reading processing may be described even more precisely. Core concepts like Turner’s “blending” and Hofstadter’s “cognition is recognition” are found in their important and influential works (1996/2014 and 1995).

When first encountering the early hypertext fiction works, readers – both lay(women) and critics – who did not program, or know anything whatsoever about the workings of the computer, were tempted to read screens and nodes as pages (cf. the epigraph by Hayles). Despite early and well-intended warnings about leaving out perspectives of the interface and the programming languages (see Aarseth 1997), researchers led on by, for instance, generic markers often resorted to conventional reading habits and turned to narrative and analytical methods from literary studies when facing electronic fiction. Today many articles, including some of my own, also reveal how we were (and still are) reading for plots. Familiar methods include attempts at unveiling stories, points of rising tension, conflicts and completion, and the tendency to embark on the well-known hermeneutical quest for meaning. Yet, in hypertext fictions, the reader did not necessarily come across these pivotal nodes nor make it to the “end” as such, because she had lost control, was lost, or gave up in the “middle”, amidst the maze of hundreds of nodes in the fictional work. One of the most important traits of prose-fiction, the narrator, was most often missing, so almost everything was up to the reader. She turned into Barthes’ “writerly” (*scriptible*) reader. Yet, not everything was up to the reader: The underlying programming and codework still limited her ‘real’ authorship and narration.

Since the electronic works today include or apply predominantly to visual forms, the reading processes require more tools. Drawing upon visual-, film-, music- and performance theory, analyses are methodologically moved into the sphere of transaesthetic and intermedial readings. Most traditional narratives

7 Mangen and van der Weel discuss this with regards to hypertext novels in particular. Their empirical research on reading habits lead them to three key explanations for these novels remaining marginal and thus not read: 1) “problems” with relating to our cognitive information processing, 2) psychological reasons for how we read and enjoy literature in particular, 3) the evolutionary origins of a predisposition for story-telling and literature.

and novels are read unilinearly and sequentially, whereas multilinear and multimodal e-lit must be read spatially, vertically and horizontally, since words and images may be morphing and simultaneously moving around and across the screen. More than ever, the oscillating and blending processes, analyzed by e. g. Iser, Turner and Hofstadter, are working at an even higher speed to organize and reorganize the highly complex data into more fixed parts.

To date, many different methods and theories have been suggested and developed for understanding the relationships between word and image. W.J.T. Mitchell's *Picture Theory* (1994) and the anthology *Eloquent Images. Word and Image in the Age of New Media* (Hocks 2005) are seminal works. So are works by social semioticians Gunther Kress and Theo van Leeuwen, and their continuous investigations of the "grammar" of multimodal works and their design (2006). Briefly summed up, they emphasize the interrelated systems of the representational and interactive meanings of images. These systems are crucial now that the golden section, the linear perspective, colours, light, etc. are no longer adequate to analyze the compositions of images, screens and web pages of multimodal texts. Van Leeuwen shows how ways of linking information between two or more modalities result in either *elaboration* of one of the elements through specification and explanation, or *extension* through similarity, contrast or complement (2005, 229–30). On top of this, every link is reversible – at least in principle. These observations remind us of Barthes' dialectics in "Rhetoric of the Image" (1964), where he shows how text anchors the polysemic picture and how it relays the different complementary semiotic systems, thus expanding and amplifying the other's meaning. This is indeed the case with e-lit.

The abovementioned analytical operations and reader interaction obviously interrupt the flow of reading and make us all too aware of the medium. Good storytelling and print literature are usually accompanied by experiences and feelings of getting lost and finding the pleasure of and in the text (see Victor Nell 1988 and Barthes 1975). Like Barthes' discussions of literature being "readerly" (*lisible*), immersive ideals are "tied to the fortunes of an aesthetics of illusion" (Ryan 2015, 4). These ideals rise and fall, and Ryan argues that when the 20th century displaced or replaced illusion with play and (self)reflection, computer games became the ultimate example of immersion: They empowered and allowed participants to read, interact and be completely immersed when using VR-technology.⁸

⁸ Ryan's book was published in 2001, and VR technology almost disappeared. Installation works like *Screen* re-discovered both gloves and goggles. Within the last few years VR-technology has re-appeared. Abovementioned Fisher is currently involved in a project with artist Wallace Edwards "Illustrations – Immersive Worlds, Creative Storyworlds", cf. <http://www.yorku.ca/caitlin/home/projects.html>

Meanwhile, discussions about and examples of close-readings of e-lit emerged around the year 2000 and onwards. An early example is Van Looy and Baetens (2003). In their introduction to *Analyzing Digital Fiction* editors Bell, Ensslin and Rustad (2014) underline close analysis, gender and digital writing technologies, immersion and interaction, reflexivity and re-reading as analytical fundamentals (see also Paulson and Malvik 2014).⁹

In 2011 Hans Kristian Rustad identified and described four “preconditional modes” for reading hypertext fiction that are also found in print literature: “se-mantization”, “exploration”, “self-reflection” and “absorption”. Applying elements from Iser’s reader-theories in regards to these first three, Rustad analyzes Megan Heyward’s multimedia cellphone narrative of *Day, of Night* (2002) about a woman who has lost the ability to dream. Based on a chapter in James Joyce’s *Ulysses*, the narrative follows the main character Sophie while she “explores her memory and surroundings in search of objects that will make her dream again” (unnumbered). The text, operating at the intersection of narrative and interactive forms, encourages a precise sequence of reading and takes advantage of aspects like genre recognitions, experience of cohesion, while balancing “cultural affordances like literary and narrative conventions such as Aristotelian poetic practice, narrator, inciting incidents, climax and resolution” (ibid.).

Anchorage relations between modalities and other relations prefigure what Rustad calls the *semantic* orientation of reading – the most important of his four preconditional modes. Meanwhile, reading as “exploration”, where the reader is driven by chance and not by confirmation and predictability, compares to Iser’s mode of acquiring experience in print literature, e. g. by randomly mousing over the screen making text or visual elements appear by chance. The third mode, “self-reflection”, is minor and even inferior to the first. As an example Rustad mentions the pleasure a reader might feel when she gets an as-if-presence through an avatar in a computer game. Seeing Sophie walking the streets while one listens to her footsteps and cars passing, the reader is in touch with Sophie and the fictional world seems coherent. Rustad does not find the fourth mode, reading as “absorption”, in this particular work, and refers to the absence of Barthes’ self-eliminating mode in reading a readerly text.

Generally speaking, what we see in many of the scholarly publications mentioned above is a “plea” for (and a return to) hermeneutic literary analyses, close-

⁹ *Analyzing Digital Literature* is one of few and recent books that moves from analyses that theorize and describe to ones that actually close-read electronic fiction and poetry. Divided into three parts (Narratological Approaches, Social Media and Ludological Approaches and Semiotic-Rhetorical Approaches), eleven scholars analyze both familiar and recent Anglo-American works.

and deep readings and interpretations, e. g. applying reading-models like Rustad's, and likewise in my reading of *Astroecology* below.

Brief Overview of Electronic Literature in Scandinavia

To date, sites that present works and close readings of Scandinavian E-lit are few and far between. Exceptions include a special issue of *dichtung.digital.de* in 2003, which focused on Scandinavia. In 2012 they also presented an article by the Norwegian visual poet Ottar Ormstad, and Rustad's "A Short History of Electronic Literature and Communities in the Nordic Countries" (2012a). The volumes of *ELC* comprise mainly Anglo-American works, although *ELC3* lists three works as Norwegian: *When* by Ottar Ormstad, *Tokyo Garage* and *Frequency* by Scott Rettberg (now living in Norway). In addition, the same volume lists one Swedish work: *Evolution* by Johannes Heldén.

ELMCIP's online *Anthology of European Electronic Literature* includes 18 works by mainly European artists, termed creations, pieces, poems, playable media fiction and speculative narrative. Among them are *Väljarna (Elect)* by Johannes Heldén and *Svevedikt (Poems floating in the air)* by Ottar Ormstad.¹⁰

ELINOR (Electronic Literature in the Nordic Region) was sponsored by the Nordic Council of Ministers in 2006. Offering a collection of poetry, short fiction, digitalized book literature, and a brief introduction to terminology, the site was an attempt to present different types of e-lit to school children among others. It was edited by well-known scholars from Sweden, Finland, Norway and Denmark; among them familiar names like Walker Rettberg and Rustad. Two years later the Norwegian Broadcasting Company NRK added "Digitale fortellinger" [Digital tales] to their site ULYD [non- or false-sounds]. Today both sites have been closed.

One of the most successful and early sites in Scandinavia was *afsnitp.dk*, a virtual exhibition space for visual poetry (1999–2009), which started as a real bookstore specialising in poetry *AfsnitP(oetry)* in Copenhagen. The well-edited and highly respected website, which is no longer funded or updated, is still accessible as an archive of electronic works, which include works by Heldén

10 ELMCIP's web page is presented under the headings of "Knowledge Base", "New Creative Works", "New Critical Writing", and links to the *Anthology of European Electronic Literature*. The Electronic Literature Research Group at The University of Bergen, Norway, maintain the site. Several European universities, colleges and departments are associated. Project Leader is Scott Rettberg. Jill Walker Rettberg, Talan Mammot, Maria Engberg and Reine Koskimaa are also involved.

and Ormstad. Furthermore, the website includes a gallery, a collection of scholarly texts, interviews and an impressive collection of links to websites (most of which are now “dead”). Likewise, two Norwegian websites are no longer running: *nypoesi.no* (2002–2008) and *gasspedalanimert.no*. The former used to collaborate with *afsnitp.dk* and different “underground” publishers, and as indicated by the URL name, *nypoesi.no* was primarily focused on poetry. Meanwhile *gasspedalanimert.no* is still accessible, but no longer maintained. It includes videos of five animated poems being read aloud by their authors. There are no Swedish parallels, but both *afsnitp.dk* and *nypoesi.no* presented several Swedish works and cooperated with Swedish magazines, writers and publishers (including the Swedish publishing group OEI, who work closely with Johannes Heldén).

Rustad has been one of the most avid and insistent researchers in keeping an eye on and promoting Nordic and Scandinavian electronic literature, communities and scholarly research. In his doctoral thesis *Tekstpill i hypertext* (*Textplay in Hypertext*, 2008a), he presents *I mellom tiden* (*In the mean time*, 2002) by Norwegian Anne Bang-Steinsvik as a poetic hyperfiction dominated by “alea” (gr. ‘chance’). He compares the work with *I Am a Singer* (1997) by Megan Heyward and defines it as a narrative hyperfiction dominated by “agon” (verbal contest in Greek drama). In his articles he refers to many of the same electronic works and concludes:

After two decades, it is too early and too few literary works to conclude about any particular aesthetic tendency on behalf of the Nordic tradition. One thing though could be singled out: I would claim that electronic literary works in the Nordic countries seem to be more *oriented towards aesthetic intermedia tendencies and traditions* rather than reflection on technological development and changes in the media situation, and the technology’s impact on our knowledge and perception of literature and the arts. Following Astrid Ensslin’s (2007) suggestion to extend the generations of e-lit from two to three, we could say that the first generation, the literary hypertexts, and the third generation, the cybertext generation, in the Nordic countries are poor, while most of the Nordic works would be defined as multimodal and fully multimedia works. (2012a, my underlining)

A few Nordic multimodal works combine the aesthetics with computer algorithms. Rustad discusses *Ingen elge på vejen den dag* (*No Moose on the Road That Day*, 2001) by Danish Sonja Thomsen as a work belonging to Ensslin’s “third generation”, cybertext literature, based on Aarseth’s (1997) concept. The work combines and blurs different semiotic resources and transaesthetic disciplines like literature, photography, drawing, music and drama. As a computer-generated text, temporally manipulated in the sense that the content, and in some cases the plot, change according to which day the text is read, the reader is not able to interact with or manipulate the text. The goal is “not to reach the end (because there is none), but rather to experience the journey itself” (Rustad, 2012a).

Especially *Evolution* (2013) by Heldén is marked by third generation traits. In collaboration with the programmer, artist and publisher Håkon Jonson, Heldén won the N. Katherine Hayles Award for this work. At his homepage, it is presented as an online artwork-in-progress designed to emulate the texts and music of the author “with the ultimate goal of passing ‘The Imitation Game Test’ as proposed by Alan Turing in 1951.” The focus is on testing the role of the “author” and what happens:

when new poetry that resembles the work of the original author is created or presented through an algorithm, is it possible to make the distinction between “author” and “programmer”? [...] The purpose of the work is not to deromanticize or deconstruct the role of the author, but is rather the ongoing exploration itself. (johanneshelden.com)

The algorithms are randomized in a continual evolution and composition. The words float to the surface, staying only for about a minute, and the reader will never meet the same text in the virtual book. The title refers to the evolution of algorithms, its material based on Heldén’s words and music. A solid, black book, carrying the same title, was published afterwards. Consisting of black and white pages it shows Java-coding, rows of data, data-structures in coding, pictures and screenshots. Chapters are presented as *sequences* and Index, including an *Appendix* 1–12, among them contributions and so-called Interventions by well-known scholars.

In his overviews of Scandinavian e-lit Rustad discusses the possibility of placing different works within literary traditions (2008b, 2012a). He refers to the early Norwegian experimental author Tor Åge Bringsværd, whose book *Faen, nå har de senket takhøyden igjen. Må huske å kjøpe nye knebeskyttere* (*Damn, they lowered tolerance levels again. Have to remember to buy new kneepads*) was published in 1971 and remediated in 1996. In 1988 Swedish avant-garde artist Karl-Erik Tallmo created *Hamnen* (*The Harbor*) in Hypercard. The work consists of 52 text fragments and is combined in a hypertext network structure. In 1992, he produced what he himself calls the first e-novel in Sweden, *Iakttagarens förmåga att ingripa* (*The Watcher’s Ability to Interfere*). Rustad writes that both Bringsværd’s and Tallmo’s texts foreground an associative mode of reading. They seem to follow the cognitive model presented in Vannevar Bush’s essay “As We May Think” (1945), which argues that our minds do not work in linear sequences but “by associational trails” (cf. my earlier discussions about the reading processes). Thus, Rustad relates them to avant-garde experiments in literary history and notes “that similar connections can be made with literary experimentations on paper and screen by works of new media writers such as from Norway Morten Skogly, Monica Aasprong, Marte Aas, Marte Huke, Ottar Ormstad, Tale Næss, from Sweden Jo-

hannes Heldén, Cia Rinne (a Finnish-Swedish artist), and Denmark Peter Adolphsen, and Christian Yde Frostholt” (2012a).

Turning briefly to the beginning of Danish “hypertextual” book-writings, I may add mathematician-turned-modernist author Svend Åge Madsen is a case in point. In 1967 he published the novel *Tilføjelser (Additions)* in a box containing five tiny booklets leaving chronology – and chance – to the reader. Five narrators are discussing and quoting both the comments of others and the author’s oeuvre, but like the reader unable to find an end or a story at the center! In 1972 Madsen published *Dage med Diam eller Livet om natten (Days with Diam or: Life at Night)*. A content page shows a tree-structured “diagram” of 63 chapters starting with an S. First split into two letters – SA and ST, then three letters SAL, SAN, STD, STE then four, five and six. The reader is then left with 32 possible endings in six letter words. In 2013 the book was illustrated and remediated. In 1996, collaborating with the public library in Aarhus on a write-on internet work *Orphus i Oververdenen (Orph[e]us in the Upperworld)*, Madsen invited people to participate. However, the work literally ran amok and had to be stopped.¹¹

Award-winning author Merete Pryds Helle is an eager user of new electronic media. She has created apps for interactive children’s books, and recently published an international prize-winning game-story, *Wuwu & Co.* Early in her career, she collaborated with programmer and writer Michael Valeur on the second part of *Crosstown* (1998), a trilogy – and ‘literary’ interactive dogma game. In Helle’s part *Giften (The Poison)* a clever female detective sets out to solve the dark ecological vision of somebody poisoning the water supply in *Crosstown*.

With her former husband, well-known poet Morten Søndergaard, who has presented several works at afsnitp.dk, Pryds Helle published crime-novels as *Liv Mørk* (meaning “life” and “dark” in Danish). *Liv Mørk* has her own Facebook-profile and biography, and in 2011 she published *Begravelsen (The Funeral)*, a novel created solely for iPads. The opening page presents the title, author name and credentials, a drawing of a mushroom and its shadow, a black fly that appears also in most of the animated scenes, and “fingerprint” options. The novel, which comprises 100 text-pages, revolves around a crime story. When the reader swipes,

11 There have been very few Danish experiments, and no real attempts to create electronic fiction. Kristina Stoltz remediated her tiny novel *Historien (The (hi)story)* 2013 into a film with a narrating voice, music and sounds. In 2007 Peter Adolphsen published *En million historier (1.000.000 stories)* in a plastic bag with a 10-sided dice formed as a roulette-ball. The book consists of 10 pages cut into 6 strips, fashioned like the ten sonnets of *Cent Mille Millions de Poèmes* (1961) by Raymond Quenau the co-founder of OuLiPo. Today Adolphsen’s remediated text can be accessed here: <http://enmillionhistorier.dk>. When you have collected a short-story, you can listen to the author reading it!

taps and scrolls down the text, she finds seven obituaries plus an initial one, appearing in a stack to the right. Clickable names link to obituaries of characters that turn out to be police officers, actors, secret children and love- and sex obsessed lonely people. Each of the obituaries has individual background illustrations (e. g. a rabbit, butterfly, or cigarette), and clicks result in inciting animated pictures of an unpleasant and/or uncanny scene connected to the deceased character. Tapping the scene, a personal story opens. This story is either connected directly to characters in the main story or functions as background information. One way or the other they can be woven into the main story. In many ways *Begravelsen* can be seen as a kind of hypertextual fiction with its simple linking system and animations.

Johannes Heldén – Storyteller

Since his debut *Burner*, Heldén and his works have attracted attention through different e-lit sites. When the abovementioned virtual exhibition space afsnitp.dk presented *Burner*, they described it as “science fiction in sound, text and images”, underscoring the work’s soundscape and image. In response, Heldén commented: “Spontant kan jeg godt lide formuleringen om, at Burner måske snarere skal ses og høres end læses. Men for mig har den hele tiden været en fortælling, mere romantisk end konkret, og uden tvivl mere litteratur end konceptkunst.” (My underlinings, Heldén, 2003). To me Heldén has upheld and expanded these views in his ensuing multimedia and multimodal works.

First published at afsnitp.dk, *The Prime Directive* (*Primärdirektivet*, 2006) refers to an instruction in the *Star Trek* series, a warning about interference with other societies or cultures. The work starts with an image of a tinted print depicting beavers in their natural, pastoral habitat. The reader is asked to pick a language, after which she is sent to an interface with two rotating “books”, the first being “The path of the fragment” and the second being “The prime directive”. Both book 1 and book 2 lead to dark visions, and show sections of a post-post dark, greenish-yellowish, industrial, urban life or world devoid of people. These environments have been compared to those seen in the works of the Italian artist Giovanni Piranesi or the Dutch artist M. C. Escher, as well as films like Fritz Lang’s *Metropolis* (1927) and Ridley Scott’s *Blade Runner* (1982).¹² Words and sentences appear when the uncanny pictures are either (no. 2) moused over, clicking 5 points in what looks like a dilapidated city-scape or the inside of a machine or tool, or

¹² See Rustad, who has included a close-analysis of *The Prime Directive* in his 2012a publication.

(no.1) the reader moves a magnifying glass around the interface. The music is ambient, drone- and machine-like, unnerving and threatening. The textual fragments, animations, colours and music point forward to what seems to be Heldén's recurring questions and artistic projects: warnings against embracing technology uncritically at the cost of vital ecosystems – but also hopes to escape these dark premonitions. A narrating apostrophic and/or a self-addressing “you” is mentioned in the textual bits, a you that wants badly to sleep or to be transported to another world.

The introduction to *Elect (Väljarna)* which was published at ELMCIP in 2008, (also) revolves around the theme of *nature* – that is, nature as something we (may) have to choose or will definitely lose, emphasized by the title of the work. Again, readers are met by enervating drone-music and, while the work loads, this quote appears: “It’s not safe out here. It’s wondrous.”

A “withering” tree appears out of a dense fog. Birds fly from the tree’s branches or from behind, circling ominously, while one of the branches moves up and down. A transparent text is sensed on the interface, and when one mouses over and clicks the text, a number lights up and unstable entries are being listed in a “box” underneath. Attempts to catch the birds result in the following text, which appears above the tree.

And flee while we try to approach

the tattered clouds that
rolled in high above the forest,

exit wounds

It grows fast now, winds around his legs, tears him down,
strangles him. Watch a pale yellow sun rise, a supemova explode,
the pupil expands
and he falls, sinking into the ground
all previously seen or mentioned,

a gray glow
everything exists forever

and stumbles out into the tall grass

In the assembled text in the box below, an “I” is ruminating over the poetic language that mirrors and is mirrored in its own construction with concrete holes randomly being filled in.¹³ The semantics emanates possible doom, a warning against future disasters that will catch up with the tree-text’s fleeing men trying to

13 Heldén and his programmer(s) obviously draw upon experiences with adventure computer games. However, I am not taking those traits into consideration here, since my focus is on the

reach the skies. Quoted in extenso the multilayered text anchors, elaborates and expands the “tree-text”:

The alphabet is an instruction, every movement leaves a shade, a light, a burned image: Now, it enters my apartment and moves towards me. I see it in the corner of my eye and it scares me senseless, but I don't turn around. When all is revealed it is impossible to find the way back. The crackle of the turntable, the stain on the carpet, rust on the saw blade, bug in the shoe. The branches over the tin roof, over the platform. The clouds are motionless. Trees are built of signs. The locust lets go, the graph of time is soft, leaves of grass rise. *It exists in words as the only way they can leave meaning.* The floor gives way, in every instance. They accelerate in the dark and turned off the high beam. The roadside disappeared, the rain crashed. Down over the area and covered the asphalt. Tiny fields of turbulence broke away at irregular intervals. The grass contained the warmth and the light one hour after sundown. It has mutated with all the bodies buried shallowly below. Transforms into reeds. Has it returned at last. Like believing static won't hold melodies, because it does. They are here, more of them than you could count: the sum of what we see are glimpses of another reality. There also, everything burns, there is also the bird alphabet above the field.

What seems to be intertextual references to Danish poet Inger Christensen's works, especially her apocalyptic vision *Alfabet* (1981), and to Walt Whitman's *Leaves of Grass* (1855), Heldén's “alphabet” also holds instructions and threats with and in words that may cause surreal catastrophes but even ‘wondrous’ possibilities with “glimpses of another reality”. The branch is waving – and whether to choose the right thing or to lose to dystopia is up to the reader.

Heldén's next work *Entropy* (*Entropi*, 2010) was published both as a book and a digital version. The latter is based on the same principles as *Elect*, including ambient drone-music, and requires the reader to grab and collect words and sentences when mousing over the interface. White dots invitingly run along lines of green “foliage” or appear as glimpses across the interface when the screen is dark. At the same time, white bars appear in a box below. The reader fills in the bars by clicking, while the white dots fetch words and phrases on the screen. Light changes. Daylight is getting brighter and brighter till you get an almost “clear” view – before darkness returns. Again, the scene can be perceived as a surreal, dystopic, industrial cityscape, similar to the one in *The Prime Directive*, but here one sees the cityscape from a distance – perhaps through camouflage nets:

Close to the city without buildings. Here it is either twilight or dawn all the time. Suddenly the blowtorch of the sun in the face runs towards it over hot gravel. Crickets. Electrical lighting. Power supplies. Scrapyards. We must wait for them. Don't like it when the forest is so dense. Chilly when clouds approach. Someone is claiming to show it all not omitting any-

literarity of the novel-genre. Ryan and Yellowlees Douglas, among others, have pursued the topic of literature and computergames for years, cf. the bibliography.

thing. Along the abstract line a disproportionate amount of violent crimes. It spans the sky. The borderline of fiction is dim, a smoky edge, a lilac hedge. Dumping ground in the woods. The building obsessed with its own existence. The trees defoliated. At least you get a **clear view**. The thoughts of the city intercepted. They crouch greedily over the apparatus. Shades fall over forest camouflage. Before it exists, you see it and it has secrets, dusk geometry, geography. Explains a lot. Perhaps everything. Vague formulas, thin lines. Note the yellow light. I was indoors when the rain came, photo flashes in the narrow alley. There is a fire above the tree tops.

Entropic predictions are underlined by “dumping grounds in the forest”, “scrapyards”, “cities without buildings” etc. But maybe it is all in the books? One way of interpreting the line “Before it exists you see it”, and including the line just before the quote above “The books are machines designed to move you towards a State”, could point towards the same dreaming, sleeping author and a conscious, writing author ‘indoors’, in the process of creating – dystopic fiction on the dim and thin borderline of fiction. Clicking the white dots the following text appears:

consciousness searching trying to find
 a connection between images:
 when you sleep
 the vegetation watches over you
roadside, riverbank, star...
 [...]

An Electronic Novel?

In many ways, it seems obvious to read *The Prime Directive*, *Elect* and *Entropy* as comprising one larger work, since they share themes, aesthetics, conceptual ideas and functions. Heldén is a consistent artist engaged in nature and human life – not to mention the future. Despite their dystopic envisions, the three works convey a strong sensitivity towards nature and the idea that life shall continue. So does *Astroecology*, Heldén’s latest work. A golden island, mirrored and floating in golden water, is printed on the front of the green book version, whose title also points to a possible move into space. In 2016, searching for the term “astroecology” online lead to Heldén’s homepage, a Wikipedia explanation with links to Heldén’s site, and to a homepage apparently belonging to something called The Society for Life in Space (SOLIS). They defined astroecology as the scientific study of the interactions of life with space environments and resources: “The results quantify the immense potentials for future life in the Solar System and in the galaxy. Cosmoecology extends these studies to potential life and its resources throughout the universe, for trillions of eons when viable matter will continue to

exist, or indefinitely.” Today there are numerous entries to the term, and the quote is now part of <http://www.astro-ecology.com>. In many ways, the manifesto is resonating in the universe of Astroecology.

Like Rustad’s reading of *Entropy*, both the book and a CD-ROM version, as a symbiosis or parasitic relationship between two simultaneous and complementary strategies of imitation and intensification, (2012b), the electronic version of *Astroecology* and the printed book are closely interwoven – even more so.

Starting with the book, it can be described as a composite of 37 photos and texts. There is one photo on each page, and most depict nature – nature “taking over” or popping up from stairs, woodwork or walls, a cricket, a deer and raindrops on windowpanes. Each picture has a main “caption” text, some of which include few or several footnotes, 73 all in all. Seven double-faced pages repeat a drawing of the same house, place and environment. As the book progresses, the house appears more and more overgrown, ruined – and the drawing appears more faded. By the end, the drawing looks like an undeveloped photo, a radiating x-ray, or a representation of an aftermath of climate changes or an atomic bomb.

The house changes as well. At the beginning, one sees the house with a staircase, a lawn in front and garden-walls on two sides. The house is situated in what looks like a meadow, with trees at the back and in the front, through which a small brook or road is running. Numbers between 1 and 37 are found around the house and in the forest suggesting a system of 37 chapters or parts of the book. At the end of the book one finds *The Astroecological Wordlist (1.edition 2016)*, an encyclopedia printed on brownish paper, patterned or watermarked, laced with faded, almost invisible, palimpsestic or luminous text. The wordlist opens with the entry “AI: Artificial Intelligence”, one of Heldén’s interests listed on his homepage. The contents of most of the entries include strange cross-references, weird and uncanny words. 14 entries are illustrated by drawings of what is described as extinct life and phenomena. An entry on the “blue whale” informs the reader that it disappeared in 2026, another that foxes “built bridges” around 2028, and yet another that stairs is “a construction that challenges or abolishes gravitation” etc. The last entry of the *Wordlist* is the letter “ö” (which in Swedish also means “island”). It is illustrated by a drawing, depicting the picture of the golden island from the cover of the book version:

island, landmass surrounded by water. As the water in the river started to rise, islands formed in the swamps, the alder forest, the field, the lawn, the basement. See also: *cat*, *wind*, *spaceship*, *sentience*.

When Heldén acted and performed *Astroecology at Dramaten* in 2016, the illustrations from the wordlist ran as a top banner on their webpage. On the same page

Heldén introduced and explained the background for his work (in Swedish), and the theatre presented the performance in the following way:

Vart är vi på väg när klimatförändringen skenar och vi manipulerar DNA och utrotar arter? Vad händer med våra inre och yttre landskap? Med inspiration från astronomen Carl Sagans världsbild visar konstnären och poeten Johannes Heldén på kontrasten mellan vetenskapens stora sammanhang och individens personliga förhållande till naturen. Hur människan letar mönster i tillvaron – för att förstå den, kontrollera den, känna trygghet. Världsrymden möter poesi i en ekologisk ton. (Heldén, 2016b)

The questions asked in the theatre's introduction are carried over and into the electronic version of *Astroecology*. The main page shows a wind-battling tree – a reference and link to an introduction by Jeff VanderMeer titled “The wind tears apart the signal”. Clicking “Start”, one is brought to the first page – an open book on a table. The virtual book shows a double-paged picture of a small house, with a lawn in a meadow in a forest – in other words, the exact same picture and house that appear in the print book. Drone- and ambient music is playing, a bird is flying around. Day and night shift, and the lights are on in the house when it gets dark. The year 2016 is shown in between the picture and an empty rectangular box. This box looks like information plates, or labels, that appear under or on the frames of paintings in a museum. Mousing over the interface, one sees transparent words or nexus in the box. When one clicks the scenery, quick glimpses of photos depicting leaves, grass, herbs, sprouts, ferns, clouds, a sky, meadows, or overgrown stairs appear. Meanwhile, words and sentences gather in the box.

A difficult hunt and catch of the quick bird changes the year to 2026, and one is sent to elements that also appear in the printed version of *Astroecology*: the abovementioned drawing of a blue whale and the entry on its extinction in the *Wordlist*. The bird is following, and catching it while on this page, one is returned to the former page to continue filling in words in the box. Catching the bird again, one is sent to the encyclopaedic entry, about the fox. The year has now changed to 2036, and one can click the fox or the textual entry. This sends the reader back to a darker vision of the house in the forest, which is taking over more and more of the meadow and the lawn. Fog has appeared in the corners. The music is changing, threateningly subdued. The lights in the house turn weaker, the music start to crackle, like bad radio waves. Throughout the reading, the abovementioned glimpses from “healthy” life and nature appear. Catching the bird, the year changes to 2046 – and a drawing and an entry on fern. This repetitive pattern continues to the year 2156 where the gradual disappearance of the house, lawn, walls and meadow result in the x-rayed representation from the book, now accompanied by the words “brought on by changes in the atmosphere”. The “extinct” animals, things and phenomena, and their entries from the *Wordlist* mark every

decade from 2016. The last entry in the book version, the island, has been replaced by but is connected to the rooftop garden, and is the last entry in the electronic version:

rooftop garden, cluster of plants on rooftops. Observation point when clear water rise between trees and over gravel paths, when new islands emerge and space ships lift at a hazy distance. See also: map.

These gardens, a trend in densely populated cities, may be regarded as a positive small step to include nature and especially bees into cityscapes, but at the same time it can be viewed as a (desperate) move to preserve something on the immediate verge of being lost. The ambiguity is underlined by the entry in the *Wordlist*. Here they are described as last resorts when the world is drowning and space ships are lifting off – either on their way to colonize or interfere in other solar systems (as in *The Prime Directive*) or to study the interactions of life with space environments, resources and potential life in the universe (cf. the research by the abovementioned society SOLIS), and in Heldén's other works. Clicking the entry, one is sent back to the start of *Astroecology* – to a new beginning.¹⁴

The texts assembled in the boxes below the interface-pictures are mainly from the book version. Unlike the book, the electronic version does not include the “separate” extensive footnote-system, found in the printed book. Footnotes are rarely seen in fiction, but there are examples of so-called footnote-novels. One is *Armand V. Fotnoter til en uutgravd roman* (*Armand V. Footnotes to a non-excavated novel*) (2006) by renowned Norwegian author Dag Solstad. Another is Vladimir Nabokov's *Pale Fire* (1962). Solstad writes his novel in 99 footnotes – some of which are subdivided, some very long and some very short. *Armand V.* is told by an omniscient narrator, excavating a novel through the footnotes – thus turning author. Nabokov's self-appointed editor re-composes a fictional author's “Pale Fire”, a 999-line poem in four cantos, through an extensive commentary. Jumping between the comments and various numbered lines of the poem, the editor is reading for a plot, piecing it together through his own comments – while not particularly interested in the poem itself.¹⁵

Heldén's footnotes in the book and the clicking and piecing together the digital version of *Astroecology* hold both aspects. The way the reader is driven to ex-

¹⁴ In a forthcoming article, I read *Astroecology* ecocritically as a “meshy Gesamtkunstwerk” applying theories by e. g. Timothy Morton.

¹⁵ In 1969 datapioneer and philosopher Ted Nelson used *Pale Fire* as a hypertext demonstration at Brown University, as did Espen Aarseth in *Cybertext* to explain the differences between unicursal (straight through) and multicursal readings of hypertexts (1997).

plore and assemble the texts, often by chance, instills a feeling that the missing parts hold important information and thus must be found – and read. Encouraged by glimpses of natural life and natural decay, but at the same time forced on by the threatening and eerie music, the dystopic visions of the imagery and the years passing by, the reader and the narrating “I” are urged to “look for existential patterns to understand”, cf. the introduction to the performance at *Dramaten*.

In both versions of *Astroecology* the “I” is going back to a house in the countryside, observing a basement being reclaimed by nature. Listening to and watching Heldén talk about his project at *Dramaten*, one understands that the work also holds autobiographical references: “I grew up in that place.” The “I” suffers from asthma, there is an urban everyday life with two cats (one dying), an empty bed in a hospital, travels with music and performances (to e. g. Tokyo), and an engagement in astronomer Carl Sagan’s thoughts and the writings of famous science-fiction author Ursula K. Le Guin. “He” watches films and writes about *Blade Runner* while observing that: “What I do emerges through fragments” (footnote 8). The following appears in footnote 11, which is linked to text no. 6 in the book:

Formulating a poetics. Accessing the fundamental structure. See: crystalline formations, slides of rock types or plants. The syntax resembles poetry. It moves in unpredictable ways with a set of rules too complex – or decentralised – to take in. Or: a *novel* about rooftop gardens. (My underlining)

These scattered pieces of information and cross-references challenge and urge the reader, just like the narrator/author of *Armand V.* and the editor in *Pale Fire*, to puzzle together and plot one or more stories. Even if many of the textual fragments resemble lyrical forms, found especially in Heldén’s earlier works, narrativity seem to gain momentum in his later works. Recalling his remarks about *Burner* and his inclusion of performances, his talks about and exhibits within the landscape and universe of *Astroecology*, point to exactly that: novelistic storytelling.

Heldén’s preoccupation with the future of the planet, his empathic plea for acts and alternatives to the escalating global warmings, his warnings and wake up calls to spectators, listeners and readers are shared by many. Among them is recently deceased Ursula K. Le Guin quoted on Heldén’s homepage: “I turn to *Astroecology* and its Encyclopedia when the weight of the actual world grows heavy, and I need to be surprised, or puzzled, or refreshed.” She did not develop on this, but let me guess that she read *Astroecology* for its beauty, its possibilities of interactions, its puzzling views of and concrete choices to be made concerning the future – and the important role of creativity, art and literature.

(A Tentative) Conclusion

In many ways, Heldén's oeuvre present "typical" themes of avant-garde existential "plotless" novels, told through modernist often multi-layered discursive practices, now including words, images and sounds. Based on recurring thematic storylines, illustrated and narrated by an engaged "I" who is observing, dreaming and converting the impacts of climate changes - intensified by the work's multimodality and multimediality, I am reading Helden's works, and especially *Astroecology*, as a novel within avant-garde literary history. But I may of course be stretching the historically generous hybrid genre too far? No doubt, most of Heldén's works can also be regarded as transaesthetic poetry, as a "long poem" or a suite of poems – but to me this limits and constrains the reading, leaving out several of the abovementioned recurring dramatic and novelistic features.

If electronic novels are indeed missing, what could be (some of) the reasons? Is it because the novel has been tied in with and been specified by its medium: the printed book? Will it therefore take longer to expand and "redefine" the genre? Is it because a short attention span excludes today's readers from deep-reading and close-reading (a skill required to consume longer books. See Hayles, 2008)? Are reader expectations and reading habits so crude with regards to longer works of fiction that writers themselves have little interest in creating electronic novels? Must creative writers be software developers and/or imaginative. creative programmers like Heldén and his collaborator Jonson? *Are* the aesthetics and literarity of the novel actually much better suited to the book, leaving the "noisy net" more or less to electronic poetry, short fiction and works like those in *ELC1–3*, *ELM-CIP* and elsewhere? Reading through the preface and most references to e-lit in *The Johns Hopkins Guide to Digital Media*, the *ELO* or *ELMCIP*, one is struck by the lack of discussions of potential creative electronic novels. In contrast, computer games that are remediating characters and plots from novels, fairy tales, Aristotelian drama- and storylines are at the forefront.

Recent literary works designed for smartphones and tablets, as well as electronic children's literature, may demonstrate way(s) to go.¹⁶ A promising example of the former is *PRY*, a "First Person Digital Novella" by the art collective Tender Claws. The reader explores James' mind after six years in the first Gulf War. His failing vision and his past continually collides with his present. Combining elements from film, computer games and novels, the novella presents the reader with

¹⁶ *Andromeda* (2008) by Caitlin Fisher, accessible at *ELC2*, is both a physical children's pop-up book and a digital work to be "read" by the use of a webcam. Another example is *Alice for the iPad* by Atomic Antelope.

a seamless blend of words and images which convey different layers of James' consciousness. One can open or shut his eyes, pull his memories apart, or read his thoughts by swiping in different directions. Through these unique interactions, James' past is unravelled, and so are lies, as the reader literally pulls the narrative apart and reads between the lines.

Based on my readings of e-lit here and earlier, this is a tentative conclusion by necessity. E-lit is quite obviously still considered a transaesthetic "trading zone" of a wide variety of well-known, but generically blurred or changing aesthetic strategies. More electronic novels and novelistic works have to be created, and for some time yet to come, they apparently need to be promoted through willfull (close-)readings of individual works – a well-known fact and experience from the study of avant-garde art and literary history in the past.

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