

Chapter 2

The Computational Network Environment of Poetry

One consequence of the media situation for poetry in the twenty-first century, as I alluded to in the introduction to Chapter 1, is that poetry travels between media. This movement takes place in an egalitarian media structure. In this way, questions about the value of a particular medium, as well as the various art forms that poetry interacts with, appear to be inadequate. Such questions of comparing art forms and media have long been posed and will be familiar for instance from Gotthold Ephraim Lessing's discussion in *Laokoon oder Über die Grenzen der Malerei und Poesie* (1766) or more recent debates e.g. the "pictorial turn," as suggested by W.J.T. Mitchell (1992). Rather, poetry can take the form of a written text and/or oral text, combined with images, still and/or moving, and music; it can appear on commercial social media platforms, independent platforms and on a screen in a movie theater or museum, and, indeed, it can be printed in a book. This is a media-ecological practice in which the question is not about which of these materializations, in terms of form and media, has the most value, is the most poetic or is the most appropriate and significant. Nor is the question about which of these materializations is the most "original."

Still, there is something else, or rather more, going on here. What I am proposing is not a mere version of the ancient approach that looked for analogies between art forms, as in Horace's *ut pictura poesis* (c. 18 BC). Nor am I describing the tradition of the sister arts, in which art and literature inspire new art works and literature, nor, indeed, the idea of a *Gesamtkunstwerk*, first coined in 1827 by Carl Friedrich Eusebius Trahndorff in his *Ästhetik oder Lehre von der Weltanschauung und Kunst* and later made famous by Richard Wagner. Finally, I am also attempting to get at something beyond newer ideas about the ekphrastic relationship between art forms as encounters (Kennedy 2012). Rather than reflecting a "total work of art," as was the original idea of a *Gesamtkunstwerk*, the different medializations of a poem complement each other and reflect a potentially never-ending process.¹ We might call this potentiality an unfinished poetics, which I see as related to Peter Lunenfeld's "unfinished business" (Lunenfeld 1999; see also Chapter 6), a concept that seeks to account

¹ The idea of art works complementing each other is a pre-Raphaelite approach, described by Aaron Kashtan as "resulting in a double art work whose poetic and pictorial components produced a combined aesthetic effect." (see <https://victorianweb.org/painting/prb/kashtan12.html>) This is a potential connection to art and literature in digital media that could be explored further.

for the mutability, variability and instability of texts in digital culture. Like myself, N. Katherine Hayles also grapples with the problem of incompleteness in programmable and network media. She asks for

a theoretical framework in which objects are seen not as static entities that, once created, remain the same throughout time but rather are understood as constantly changing assemblages in which inequalities and inefficiencies in their operations drive them towards breakdown, disruptions, innovation, and change. (Hayles 2012, 13)

This claim has a number of implications for the context of this book. First, there is a question about the relationship between poetry and media; next, there is a question about the interplay between human cognition and artificial intelligence, which Hayles calls unconscious cognitions (Hayles 2017); and, finally, there is a question about understanding poetry as event, performed by programmable and network media. Moreover, as poetry travels between media platforms, digital and analog, both the poems and their surroundings change: every new materialization adds something to the media-ecological history of the particular poem. Therefore, the poems do not “remain the same” but are constantly in transition.

The aim of this chapter is to suggest a framework for the study of poetry in programmable and network media that recognizes poetry’s “constantly changing assemblages,” as Hayles calls them, which are, I argue, a result both of computational and network dimensions of digital media. I call this framework the “computational network environment.” The chapter discusses some of the media conditions for poetry in the digital age and poetry as intermedial event, including how to understand the relationship between media and poetry, applying a perspective in which poetry and media cannot be totally separated. Rather, the two need to be acknowledged as being in a reciprocal interaction with one other. This is especially true when poems are made exclusively by or in collaboration with advanced computers. The latter case, in particular, engages a posthuman perspective and recognizes non-human subjectivity. In the following, I will first briefly describe the development of poetry in digital media. This development convincingly demonstrates the impact of programmable and network media on poetry and makes evident how poetry today is in a media ecological situation and is part of a computational network environment.

A short history of poetry in digital media

The history of poetry in digital media can be traced back to the 1950s. Chris Funkhouser offers a chronological overview of digital-poetic works and refers to Theo Lutz’s text-generating computer poem “Stochastische Texte” from 1959 and Ian Somerville’s “I am that I am” from 1960 as early examples (Funkhouser 2007, xviii).

Despite the fact that these early literary experimentations with digital technology were in poetry, and due to projects that aimed to develop more “useful” or convenient hypertext writing programs, hypertext fiction and narrative digital texts like *afternoon, a story*, by Michael Joyce, originally written for Storyspace in 1987, and Stuart Moulthrop’s *Victory Garden*, another Storyspace classic, from 1992, for a while, dominated the broader field of digital literature. Likewise, in Scandinavia, Karl-Erik Tallmo’s *Iakttagarens förmåga att ingripa* (*The Watcher’s Ability to Interfere*) from 1992, written on HyperCard and published on disc, is an early example of digital fiction.

The intimate interweaving of literature and digital media technology has so far manifested itself in four generations of digital literature. The two first are often referred to as hypertext literature and multimedia literature. In addition, the development includes cybertext literature as the third generation and social media literature as the fourth generation (Rustad 2012; Bell, Ensslin and Rustad 2014). These four generations highlight different aesthetic and medial strategies, strategies that are related to specific developments in media technology and digital culture.

In the first generation of digital literature, we find texts that particularly emphasize the use of hypertext technology. Narrative hypertext works received much attention from the research community in the late 1980s and 1990s. They represented, so to speak, the status quo of digital literature at that time. Prominent examples include the works mentioned above by Joyce, Moulthrop and Tallmo, and in the field of poetry, Deena Larsen’s *Marble Springs* (1993) and Stephanie Strickland’s *To Be Here as Stone is* (1999). In these works, the potential of hypertext technology to create texts with numerous possible parallel courses of action and event with different endings (that is, if they had one) is prominent. With the turn from a hypertext-oriented digital literature towards multimedia digital texts (see Ensslin 2006; Hayles 2007; Rustad 2012; Bell, Ensslin and Rustad 2014), one can once again recognize an expansion of digital poetry and other poetic experimentations outside the narrative field. By the turn of the millennium, digital poetry had developed into what Adalaide Morris and Thomas Swiss describe as largely made in “DHTML, JavaScript, Java, QuickTime, Macromedia Flash, Shockwave, and other programs that combine verbal elements with graphics, images, animation, sound, and other multimedia effects.” (Morris and Swiss 2006, 14) This second generation, which Hayles refers to as “post-modern electronic literature” (Hayles 2007, 7), comprises multimedia narratives and poetry and, as Morris and Swiss propose, makes use of forms of expression and media such as writing, photography, graphics, film, animations, speech and sound.

Works in both of these first two generations are mainly structured according to hypertext technology, where readers make choices and partly control how the text develops and which events that will take place on the screen. In contrast, the creation and development of literature in the third generation is more or less

algorithmically driven. In her book *Literary Gaming* (2014), Astrid Ensslin writes that the term cybertext is applied to digital literature to emphasize how literature plays with the role of the reader (Ensslin 2014, 47). The term “cybertext poetry” denotes the ways in which software codes are given a more prominent role as an agent, partly in control of the reception of the work, though without suspending readers’ possibilities of interaction. To call these works representative for the third generation does not mean that “cybertext poetry” first appeared after the millennium. Lutz’s “Stochastische Texte” is only one example of early poems in which the computer is partly in control of the evolution of the text.

Given the flexibility of poetry and the intimacy between poetry and digital technology, it should come as no surprise that the fourth generation of digital poetry has found its way to social media. In blogs and on Twitter, Instagram, Facebook and TikTok, texts in different literary genres are flourishing. As a result, poems on these platforms might correspond with terms like blog poetry, Twitter poetry, Instagram poetry, Facebook poetry and TikTok poetry. This is poetry that has been introduced, tried out or exclusively published on a social media platform and that utilizes social media’s affordances towards literary and artistic ends. They turn social media into literary media and make them literary and artistic sites where readers and viewers can experience poetry alongside other communicative activities on the platforms. Social media offers literature an opportunity to be in direct and continuous contact with its readers, mediating the possibility of a social reading in which readers qua “followers” experience a sense of belonging to a community of followers and readers with a preference for similar kinds of poems.²

The development of digital poetry, conceptualized in terms of generations, suggests both a chronology and causal relation between poetry in digital media and innovative developments in digital technology. The four generations discussed above demonstrate how in just a few decades poetry in digital media has responded swiftly and in a diversity of ways to changing media conditions. This evolution shows how poetry is media sensitive: rapid changes in media technologies lead to equally rapid changes in poems, making way, in turn, for new poetic genres. Additionally, this development reveals a continuity. Some of the poetry works that I have mentioned, like Larsen’s *Marble Spring*, are written on predefined writing programs, such as Storyspace and Hypercard. They are thus early examples of platform literature. Today, platform literature is more or less synonymous with literature on social media platforms such as Youtube, Facebook, Twitter, Instagram and TikTok.

2 For a further discussion of this “generation”, see Chapter 5.

Concerning the relevance of platforms, there is a significant difference between works on Storyspace or Hypercard and poetry on social media. One difference involves the affordances of the platforms that to some extent will differ from platform to platform, which makes the poetry in question platform-specific. Another important difference between platform literature in the late 1980s and today concerns the processes of distribution. First-generation works were mainly distributed through floppy disks, with a distribution model similar to that of print literature. For instance, the Eastgate systems is one well-known online publisher and bookstore for digital literature.³ Today, however, poetry on social media is made available through network connectivity and various algorithm-driven feeds, giving way to different literary systems that also alter the long and stable “Gutenberg galaxy”. Furthermore, other forms of poetry in digital media are accessible via archiving projects and websites with collections of links. Besides, the first three generations contain poetry where the digital media technology is more directly intervening in the poetic expression. In contrast, social media platforms mainly serve communicative and distributive possibilities for poetry in digital media, in addition to providing and supplying poems with paratexts and visual frameworks.⁴

Digital and digitalized poetry

The development of poetry in digital media demonstrates an evolution towards a contemporary situation in which digital, digitalized and analogue poetry are all entwined. Still, in much of the research on poetry in digital media, there has been a strong tendency to distinguish between digital and digitalized poetry, despite the fact that both categories of poetry appear in a digital medium and operate in an environment of programmable and network media. “Digitalized poetry” is poetry that has traversed media borders, from a non-digital medium to a digital medium. The process is a technical transfer of analog information to digital data. In most intermedial events, this transfer across media ontologies and borders would have an effect on the poems and on how they appear on a screen. Furthermore, it has an impact on the internal structures and functionalities of the poems in question and, consequently, on how they are distributed, archived and read. In contrast, the term “digital poetry” is frequently used synonymously with poetry that is born digital. It refers to poetry written in order to be published, distributed and read on programmable and network media (see e.g. Hayles 2006; Engberg 2007; Strickland 2009).

³ <http://www.eastgate.com/> (15 December 2022).

⁴ The affordances of social media will be thoroughly discussed in Chapter 5.

Strickland is one of many who emphasizes that digital poetry interacts with and depends on digital media affordances. She writes that digital poetry “relies on code for its creation, preservation, and display.” (Strickland 2009, n.p.) So far, this definition would hold true for both digital and digitalized poetry. Strickland then continues by insisting that “there is no way to experience a work of e-literature unless a computer is running it – reading it and perhaps also generating it.” (Strickland 2009, n.p.) Strickland’s definition serves to distinguish between poetry that is born digitally and poetry that is non-digital. Her definition is a strong appeal to later research: digitally born poetry should be researched and treated differently from non-digitally born poetry. This is because its ontological status is fundamentally different from that of poetry in other media; it is “code born” and is typically composed and produced in order to be read in a different medium than print poetry. For this reason, one might regard this poetry as a media-specific form that offers other poetic and aesthetic experiences than poetry in other media.

To distinguish between digital and digitalized poetry thus appears to be a reasonable approach to an early phase of digitally born poetry and, with regard to some poetic genres, it still makes sense to maintain this distinction. For a genre like code poetry, for example, which is digitally born, it makes sense to differentiate between digital and digitalized poetry because the former is dependent upon computer codes that are part of the poems.⁵ Still, in respect to the media-ecological situation that I described in the introduction to this book, this distinction does not always hold. Actually, one could argue that to separate digitally born poetry from the ecology of media and poetry in which it is entwined, would be to isolate it from its network situation. Moreover, Strickland’s strict and rather exclusive definition ignores much digitally born poetry.

When Strickland claims that “there is no way to experience a work of e-literature unless a computer is running it,” she does not take into account digitally born poetry that can be experienced without a computer running it. Digital poetry that is not interactive and does not include sound and moving images and letters can, usually, be transformed from screen to paper without this transformation involving significant changes to the aesthetic and semiotic expression of the poem. Even further, with regard to an increasingly popular genre such as Instagram poetry, there is good reason to acknowledge it as digitally born poetry. One could, of course, argue that Instagram poetry, in its poetic and aesthetic expressions, does not exploit in any significant way the potentiality of computer codes and other media affordances. It might be written on a computer program, but

5 See e.g. Wiebke Vorrath’s article “Unter der Oberfläche? Programmierte Schriftlichkeit in digitaler Lyrik” (2022).

often it is published on Instagram as a photographed page from a book. Moreover, as described earlier, the most popular Instagram poets publish their poems both on Instagram and in books. Although it is possible to experience these poems without a computer running them, they are born out of and constitute a digital culture. In fact, Instagram poetry has become a powerful genre because of the way digital culture, of which it is a part, works (see e.g. Korecka 2021; also see Chapter 5).

Given the dominance of digital media technology in all areas of society, which has led poetry (and literature and art) into a computational network environment, there are good reasons for including digitalized poetry in the concept “poetry in digital media.” Both digital and digitalized poetry rely on computer codes to run in order for the poems to appear on the screen and through speakers. In respect to understanding the impact of the digital media situation on poetry, and in order to locate similarities and differences between forms of poetry, it is necessary to look at both digital and digitalized poetry. In the framework of this book, the question of origin is of less significance. It would be like asking for the beginning and the end of a network ecology. In fact, to ask about a poem’s original medium, is, I claim, to ask the wrong question. It is as I will explain and argue in the following, not a question fit for the logic of the computational network environment. The evolution of poetry in programmable and network media has come to a point where the distinction between digital and digitalized appears less relevant, or not relevant at all, for the understanding of the digital situation of poetry. Therefore, in this book, both digital and digitalized poetry are included, and they will henceforth be regarded as poetry in the computational network environment. This consolidation is not only for practical reasons. It is based on the argument made above and the scholarly position of this study. Poetry always already conveys the traces of the media environment in which it participates, a media environment where multiple media and several materializations of poetry exist in an ecology and continuously influence each other.

Computational network environment

Contemporary poetry in digital media constitutes and is constituted by what I call a computational network environment. “Computational” implies that the environment in question involves, among other things, communicative and aesthetic practices that are conducted exclusively by or in collaboration with advanced computers. Following the argument made by Hayles in *My Mother Was a Computer*, computation is a concept that originally denoted humans who would conduct the intellectual work of calculation. It then came to refer to computational machines that conducted similar labor, including complex calculations that processed massive amounts of

information in a split-second. In this way, we witness a transition from “Homo sapiens to Robo sapiens, humans to intelligent machines” (Hayles 2005, 1), an evolution that entails new and advanced collaborations between humans and computers, in short, a new form of kinship.⁶ This is not to say that all contemporary poetry in and outside of Scandinavia is produced by artificial intelligence, but that twenty-first-century media, programmable and networked media, have become so dominant in our society that it affects how we read, write and think. This implies, simply and inevitably, that digital media matters and, more than that, that the environment for contemporary poetry involves both human and non-human subjectivity.

Today, the significance of exploring the relationship between poetry and digital media and to question the roles or functions of digital technology for the creative process that leads to the materialization and medialization of poetry, are strengthened by the fact that we are witnessing, as Luciana Parisi writes in the article “Critical Computation: Digital Automata and General Artificial Thinking” (2019), a new form of algorithmic processing that learns from collected data without following explicit programming and a formal mathematical language. Therefore, we have to ask not whether but how the computer should be thought of as intertwined in the poet’s thinking, writing and creative practice. The theoretical framework that I suggest, is one that enables us to grasp how digital media facilitate poetry and how we can account for algorithms, whose ability to select, combine and make decisions turn them into non-human agents or what Hayles calls “non-conscious cognizers.” (Hayles 2017, e.g. p. 30)

Furthermore, the notion of the computational network environment emphasizes digital media’s power of connectivity. This includes networks that connect the many to the many, humans to other humans, computers to other computers and humans to computers on a large scale. Such networks are partly or wholly supported, that is, established and maintained, by the capacity of computers. It is an environment wherein poetry is floating and is centered on both human and non-human agents. In this environment, there is a continuous cooperation between coexisting entities, where none, neither media nor artistic or poetic ideas, can be completely defined in advance. It is a network, in which no medium, no genre and no text is considered more valuable or more important than any other configuration. Of course, “network” has for some time been a buzzword in our electrified society. Marshall McLuhan described the electronic age as “a global network” and metaphorically compared it to the human body’s central nervous system (McLuhan 1964, 4). The idea of a network is embedded in Vannevar Bush’s

6 Hayles borrows the term “Robo sapiens” from Peter Menzel and Faith D’Aluisio’s book *Robo Sapiens: Evolution of a New Species* (2000).

idea of a memory extender, the Memex (Bush 1945), and it has been a central term in hypertext theory since Ted Nelson's "Complex Information Processing: A File Structure for the Complex, the Changing, and the Indeterminate" (1965). In contemporary theory, Bruno Latour, with his actor-network theory, is one of the main contributors to the "network turn" (see e.g. Latour 2007). Mark B. Hansen also underlines digital media's power of connectivity and argues that the meaning of digital media – in other words, that which is mediated in what he calls the regime of networked computation – "is the technical capacity to connect on a massive, many-to-many scale." (Hansen 2010, 180) Furthermore, William Uricchio names the networked era as one of the changes "in cultural production that suggest[s] a powerful change in the situation" of texts in the age of algorithms (Uricchio 2019, 24; 28–29).

Still, network is not an exclusively technical phenomenon but is, in a broader sense, a cultural and aesthetic concept. In this respect, the network also refers to media ecology. Media ecology highlights relational dimensions in which events are given their function, as well as their meaning, in a system and in their relations to other events. Media ecology can thus broadly be described as a system in which media are thought of as connected to each other and their surroundings, both in a technical sense, like in a digital network, and in a non-technical sense, as in poetry that travels across borders of analog and digital media.

In media ecology, objects, which are considered as events, are regarded as parts of a media system – a network of media. These objects, or events, are distinct but relational. In media ecology, according to Matthew Fuller, events refer to "processes embodied as objects, as elements in a composition." (Fuller 2005, 1)⁷ This implies that one will not regard an object, a text or an event as isolated or as the exclusive center of attention and experience. This is a form of knowledge embedded in the notion that (print) literature alone is not at the center of literary experiences.

For example, Instagram poetry appears not only on Instagram but also in books. Similarly, poems printed in books can appear on Instagram. However, this description not only holds true for poetry in social media. Indeed, it is also applicable to poets such as Johannes Heldén, Caroline Bergvall, Cia Rinne, Marie Silkeberg, Ghayath Almadhoun, Scott Rettberg and a number of other contemporary artists and performers, whether they are primarily linked to digital culture or to

7 In this book, media ecology is not used as a method for approaching poetry in digital media, even though this would be an understandable approach to the field. It is rather used as a descriptive term for the situation of contemporary poetry. I will constrain myself from taking part in a wide-ranging discussion of the history and the many meanings of the concept, the method and the ontological and epistemological status of media ecology.

print poetry. In this context, we might also think of an artist like Björk, who, on her 2011 album *Biophilia*, not only combines music, song lyrics, music videos and live performances but also a mobile phone application, which, in addition to the ten songs from the album, also includes supplementary texts, as well as sound and graphic art. Moreover, materials from the album were included in a MoMa exhibition and art catalog. Likewise, Johannes Heldén's *Astroecology* from 2016 is an evolving work that so far has materialized as print poetry, digital poetry, art installations, a music album and theater (see Chapter 4). These materializations and medializations are not mere adaptations but intermedial collaborations. They complement each other in their meaning-making processes. Therefore, one could even argue that we have reached the end of generations of poetry existing solely in digital media because contemporary poetry exploits, in a variety of ways, the power of computer programmability, the network organization of digital media and/or the media ecology of literary culture. Hence, the computational network environment includes digital, digitalized and analog poetry and is simultaneously a technological and cultural concept.

Media as environment

As I suggest with the term “computational network environment,” media are conceived as an environment, as a milieu.⁸ This implies that media constitute the environment in which we think, write and read. We cannot step out of this environment because media are always already our situation. As much as media surround us, they are part of what define us. Likewise, they contribute in forming out conception of poetry. As Jacques Rancière writes in his discussion of art and media: “the milieu in which the performances of a particular artistic arrangement come to be inscribed but also the milieu that these performances themselves contribute to configuring.” (Rancière 2011, 2) Consequently, just as media are part of the definition of poetry in digital media, poetry is part of the structuring and development of a media environment.

The concept of environment is distinctive to Rancière's notion of “the aesthetic regime”; he argues that media offer “a new environment of experience, a new technical world that is simultaneously a new sensory world and a new social world.” (Rancière 2011, 36) Rather than conceiving of media as suppressing the

⁸ The conception of media as an environment is also put forward by others, such as Thomas Weber in “Der dokumentarische Film und seine mediale Milieus” (2016), Erich Hörl's “Introduction to General Ecology: The Ecologization of Thinking” (2017) and Jesper Olsson's “Shifting Scales, Inventive Intermediations: Posthuman Ecologies in Contemporary Poetry” (2021).

ways poetry appears, media as environment reflects the ways in which poetry and media are involved in each other. In a reciprocal interaction, they constitute a specific environment for experiences and perceptions, whose goal, if there is such a thing, is not defined exclusively by either poetry or media technology. Therefore, the result cannot be traced back to the one or the other.

The conception of media as an environment is crucial because the notion of a computational network environment suggests that poetry is freed from the notion of media as neutral or determining actors. To regard media as neutral implies that media are perceived as neutral platforms for materializing and distributing poems and that they in no way significantly influence the poet's idea or the conception of a work as poetry. Rancière claims that this notion of the role of the medium has been dominant in much art theory until recent times (Rancière 2011). Likewise, Hayles writes that the dominant thinking of literature since the eighteenth century has been one where the literary text is an expression of an immaterial essence "the idea of the work as an immaterial verbal construction." (Hayles 2005, 107) Hayles' argument is that in the contemporary situation of programmable and network media, one can no longer ignore the role media play in our understanding of what literature might be.

Similarly, in much theory of poetry, the relevance of other media than language and the materiality of the poet's voice and breath has been neglected. From the Romantic period onwards, poetry has frequently been seen as the most intimate, subjective and non-material type of literature. It has been regarded as an alternative and often even in opposition to the mechanical and technological world. Hegel, for instance, claims that what is significant for (romantic) poetry is the self-conscious subject that is expressed in poetry through experiences and utterances (Hegel 1975, 1113). According to Dieter Burdorf, Goethe, Hegel and the Romantic period still have a strong impact on interpretations of poetry, at least in German Studies, even if this conception is "not necessarily adequate for earlier or more recent texts." (Burdorf 2017, 23)⁹ Still, the Hegelian comprehension of poetry has less resonance in recent theory. Jonathan Culler departs from Hegel's idea in *Theory of the Lyric* (2015), introducing an elaborate and up-to-date conception of the lyrical poem. Nonetheless, Culler fails to address the function of media. In a Scandinavian context, Atle Kittang and Asbjørn Aarseth in their book, *Lyriske strukturer (Structures of the Lyric)*, which continues to be one of the main reference works on poetry studies in Scandinavia since it was first published in 1968, too suggest an understanding of poetry that deviates from the Hegelian conception of

⁹ In regards to English Studies, Virginia Jackson in "Who Reads Poetry?" (2008) makes a similar argument.

poetry. However, Kittang and Aarseth also define the structure of poetry, treating respective media, whether it is the book medium or the poet's body, as neutral.

In contradistinction to the idea of media as neutral, media could be regarded as that which sets the premises for poetry. In his conceptualization of art and media, Rancière claims that “[t]he medium, then, is no longer the means to an end. It is properly speaking that which prescribes this end.” (Rancière 2011, 35) This point indicates that the medium has some predefined properties that limit the artist's freedom and that he or she is forced to follow in order for the art to be true to itself and its medium. Rancière argues that in this conception, the medium takes on a specific materiality that defines the essence of art. This implies that a medium becomes the framework that sets the terms for aesthetic practices. Not surprisingly, Rancière refers to Clement Greenberg's conception of modernism. The use of a canvas means that, in order to realize the medium's properties, one paints “flat” abstract art, rather than figurative images that imitate a three-dimensional medium, thus breaking with the properties of the canvas as a representational medium. Paradoxically, in modernist, non-figurative art, art becomes an art that reflects both limitations and freedom or emancipation. Again, according to Rancière, art has made itself free from the idea of art as imitation, but, at the same time (and in some cases subconsciously), it also began to obey material and media affordances.

A consequence of a poetry determined by media is that media become what poetry realizes. As follows, media and media's affordances are, to phrase it in the extreme, the goal of poetry. In this sense, the medium is not a neutral instrument for realizing a poem but an agent that opposes the idea of the poet's creative freedom. By emphasizing restrictions made by media or creating new literary methods, for instance based on mathematical models like Oulipoian exercises, one might argue that one constitutes new conditions for creativity and poetry, simultaneously as one realizes literary potentials for a medium or for a mathematical model. Twitter fiction, a genre whose goal among others is to create a story or an episode in as close to 280 characters as possible (see e.g. Thomas 2014), constitutes at once a story or an episode and makes Twitter a literary medium. Likewise, as I will argue later in the book, Instagram poetry is a form of poetry that not only exhibits but also realizes Instagram. It is developed in accordance with the conditions or the logic of Instagram as a platform. In this respect, we might argue that Instagram, to a large extent, determines Instagram poetry and that this form of poetry realizes and mediates the meaning of the respective social media platform (see Chapter 5).

Neither of the two latter conceptions of poetry and media that I have discussed – media as neutral to and media as agents which determines poetry – is, as I see it, adequate for the media situation of most contemporary poetry. The

first of the two involves considerations of medium as neutral, as something that is not of concern for the poet and is based on a concept of poetry being more or less as materially solipsistic. That is, one does not recognize the fact that the poet's immaterial idea must be "tested" against something, that it needs resistance. The second conception indicates that poetry is unfree, that it is dictated by the media in which it is involved and, as a consequence, that poetry rather than realizing itself, realizes the potential of one or more media. The two conceptions give the upper hand to either poetry or media and hence maintain a structure where one of the two is neutral to or rendered passive to the other. Consequently, both views lack the ability to regard the two as mutually dependent. In contrast, the computational network environment implies reciprocal relations in order to dissolve binary thinking like subject-object, human-computer. Therefore, in the following I will argue that the contemporary media situation of poetry, what I am calling the computational network environment, is a posthuman environment wherein poetry and media, the poet and technology, are internalized. In this environment, media technology can be regarded as a creative agent.

Posthuman environment

With the dominance of programmable and network media and the introduction of contemporary posthuman thinking in our contemporary culture, the question of the role of media for poetry and the notion of media as an environment have been further intensified. Due to programmable and network media, the ecological situation of contemporary poetry differs from previous historical periods. By defining media ecology as "thinking about media not in terms of thought referred to as technical artifacts, but in terms of their connectedness to their surroundings, and centered upon the human agents in these surroundings," Solveig Daugaard makes a significant contribution to research on literature and media (Daugaard 2018, 74). Still, one should notice that while she emphasizes human agents as being at the center of the network, the computational network environment is an ecological posthuman environment in which no one center can be recognized, and even if such a center should be constructed, it would be an assemblage of human as well as non-human agents.

At the end of her book *How We Became Posthuman* (1999), Hayles proposes a version of posthumanism that recognizes contemporary culture as an interplay between the human and non-human. She rightly argues for the importance of recognizing bodily and material aspects as part of aesthetic and meaningful actions and interactions in digital media. In her later work, in *My Mother Was a Computer* (2005), Hayles states that discussions about human beings and machines, aesthetics

and technologies in the future will be to a lesser extent about tensions between traditional conceptions of the humanities and posthumanism and more about different versions of posthuman approaches to the world (Hayles 2005, 2). She justifies such a claim by pointing to the fact that digital technology “has penetrated even further into the infrastructure of developed countries.” (Hayles 2005, 2) Digital technology has become “naturalized,” so to speak. It has restructured Western societies, and it has become an invaluable part of our everyday world. This means that in many, if not all, of the fields of interest in historical-philosophical topics, including poetry, it is necessary to consider digital technology, computers, artificial intelligence and social media as providers of the contexts and conditions for culture and aesthetics, as well as as independent agents that interact with human activity. This also applies to literary studies and to the study of poetry in the computational network environment.

Posthumanism’s insight that humankind does not alone act upon the world, but that change in the world is brought about by human and non-human agents, is relevant for the evolution of genres and literary texts. For this reason, Hayles points out that print literature today appears to be far less privileged and can no longer be regarded as having a natural or exclusive place at the center of literary experiences (Hayles 1999; 2005). Her claim can be positioned in the above-mentioned rationale for posthuman thought, but it is also based on an empirical observation of the media ecological situation of literature as I have described it. As claimed in Chapter 1, today, literary texts are distributed through and experienced via various platforms such as print, audiobooks, e-books, social media and podcasts, and they interact with other art forms and non-literary genres. Although the media ecological perspective is included in Hayles’ exploration of the media situation of contemporary literature, the statement above also includes literary works and their individual media. Therefore, poetry must be considered as a product of the interaction between human and non-human agents. Non-human agents include media technologies that, in various ways, are involved in the production and dissemination of poetry and which influence assumptions about, prerequisites for and practices related to poems, whether they are printed in a book, read aloud on a stage or available on a digital medium.

Poetry and media constitute a posthuman environment in which binary relations like subject-object are dissolved and wherein creativity is embedded in the reciprocal interaction of human and non-human subjects, poetry and media. The environment is reciprocal, one in which poetry acts upon a medium and a medium acts upon poetry. The media in question are agents in the creative process of making poetry. In this environment, everything, including poetry and media, are subjects and objects for each other. Because a work of poetry relates to a media environment to which it already belongs and poetry itself performs in and

is a co-creator of this media environment, we might understand this relationship as a media-ecological relationship and as comprising “constantly changing assemblages.” (Hayles 2012, 13)

The posthuman subject can be perceived as “a collection of heterogeneous components, a material-information entity whose boundaries undergo continuous construction and reconstruction.” (Hayles 1999, 3) Tamar Sharon argues that it is “a heterogeneous subject whose self-definition is continuously shifting, and that exists in a complex network of human and non-human agents and the technologies that mediate between them.” (Sharon 2013) An alternative way, I would suggest, is one that is in accordance with the notion of media as environment, one that include media technologies as non-human agents rather than, as Sharon suggests, to regard them as mediators between agents. In such a view, media technologies can be regarded as internalized in the creative process because humans and technology have a shared history and are part of the same evolution. In his historical study of humans and memories in *Technics and Time* (1998 and 2008), Bernard Stiegler offers a ground for understanding human and technological beings as internalized. He refers to paleontological studies of prehistoric tools and weapons and points to the causal correlation between their use and changes in the human cerebral cortex. Further on, he connects this correlation to McLuhan’s idea of media as prosthesis and writes that “the evolution of the ‘prosthesis’, not itself living, by which the human is nonetheless defined as a living being, constitutes the reality of the human’s evolution as if, with it, the history of life were to continue by means other than life.” (Stiegler 1998, 50) In *Philosophising by Accident* (2017), Stiegler summarizes his position as “technics is the condition of culture” (Stiegler 2017, 59) and repeatedly claims that technology and culture are not separate entities but have, from their origin, a necessary coexistence. Hansen, in his comment on Stiegler, puts forward that

the evolution of the human can be characterized in terms of a long series of ‘new media’ revolutions: what our material history teaches us is that human beings evolve in correlation with the evolution of technics; the long line of once-new new media would simply be the index of this coevolution. (Hansen 2010, 177)

Similar to Stiegler and Hansen, Hayles too claims a co-evolution between human beings and technology and humans as technical beings. She also argues that the human way of writing, reading and thinking are intimately connected with the history of technology since these activities always have developed in accordance with media-technological evolution. Hayles names this co-evolutionary process “contemporary technogenesis” (Hayles 2012, 1–18) and explains that technogenesis involves a continuous reciprocal-causal evolution of the human and technology. As such, this evolution is important for understanding the development of

art and literature in the digital area. The adjective “contemporary” emphasizes the role of computers in meaning-making processes, including the production, distribution and reading of literature, which makes technogenesis different from earlier phases in the history of humans and technology. It is only when the computer takes on such a significant role as it does with programmable and network media, that we really see the significance of contemporary as well as previous media’s role in our culture. This posthuman environment where human and computer interact in the making includes not only digital poetry but has, as I will demonstrate later in this chapter, its effect on digital, digitalized and analog poetry because of networked media and the ecology of poetry described above.

Environment as an alternative

Computational network environment is an attempt to grasp in a single concept a major shift in the situation of contemporary poetry (as well as in literature and the arts more generally). Still, the notion of contemporary network environment might suggest both a continuation and a change in paradigm. The term does not propose another Kuhnian paradigm shift. It is not an attempt to suggest a revolutionary alteration of how we think about poetry. Rather, it is fair to claim that the concept “contemporary network environment” contributes to an understanding of the contemporary epistemic situation of poetry. Michel Foucault defines *épistémè* as “the conditions of possibility of all knowledge, whether expressed in a theory or silently invested in a practice.” (Foucault 1970, 183) While Foucault uses the concept of episteme to describe how knowledge is conditioned, the computational network environment here concerns the digital media conditions of poetry. Even though one could argue that the computational network environment points toward a situation that is applicable to cultural artifacts and communication in general, I will limit my argument to poetry.¹⁰

Close to the computational network environment is what Hayles calls the “regime of computation.” The regime of computation also denotes that we have entered an environment in which programmable and network media penetrate and affect all areas of communication and aesthetics. Hayles writes that to consider such a regime can “serve to deepen our understanding of what it means to be in the world rather than apart from it, co-maker rather than dominator, participants in

¹⁰ For those who are interested in the situation of cultural artifacts in the digital age, William Uricchio provides an intriguing account of the shift of conditions for texts in “Reassessing the Situation of the Text in the Algorithmic Age” (2019).

the complex dynamics that connect ‘what we make’ and ‘what (we think) we are.’” (Hayles 2006, 242) As in the computational network environment, Hayles’ regime of computation is fundamentally characterized by a relationship between human and machine that transcends the understanding of these as opponents or in binary structures like dominant-dominated. In fact, Hayles is among those who argue that the evolution of humankind and technology have never been separate. Therefore, she argues in favor of “technogenesis,” as a “reciprocal causality between human bodies and technics.” (Hayles 2012, 123)¹¹ In the computational network environment, the “natural” and interdependent relationship between human and technology, technogenesis, has developed into, among other things, an interaction between human language and computer code, human reading and machine reading, where computer code, according to Hayles, has brought about cognitive and neural changes for humankind (see also Hayles 2005, 2; 2012, 10).

Hayles’ version of posthumanism, expressed through the regime of computation, emphasizes that “humans are distinct from intelligent machines even while the two are becoming increasingly entwined.” (Hayles 2005, 242) What makes the interaction between humans and technology different in the computational network environment is that computer codes are linked to an advanced media technology that not only perform actions but also develops by learning from the outcome of its own actions. In other words, in order to consider the act of writing poetry in the digital age, we need to take the environment in which poetry is inscribed into account, where both humans and machines make choices and combinations and are subject to choices and combinations.

One could argue that there is substantial overlap between the computational network environment and Hayles’ regime of computation. Beyond the fact that “regime” might not imply the most positive political connotations, it can also be misinterpreted and read as if computational media are in control and determine the situation of poetry. In his well-known introduction regime as a theoretical concept, Foucault uses it in the formula “regimes of truths” to point to discourses that control truth, and to how societal power structures produce knowledge (Foucault 2010). Programmable and network media are actors that contribute to knowledge production (see Ingvarsson 2021) and the creative process of making poetry. Hence, they are not in themselves a power structure but rather part of such structures – or, as I suggest in this book, an environment. Obviously, Hayles is not a media determinist. Rather, she develops a theory for collaboration and reciprocal interactions between literature and media, between authors and digital technology. Therefore, I will continue to employ Hayles’ reflections on the computational regime and notion

11 The idea of technogenesis is elaborated further in Chapter 3 of this book.

of the posthuman but will situate poetry in a more specifically computational network environment, rather than within the broader scope of posthumanism. When I refrain from calling the computational network environment a paradigm or a regime, or to claim that it represents a paradigm shift in the research on contemporary poetry, it is because it does not present a new scientific tradition and is neither determining nor representing a model for how to approach the situation of contemporary poetry. Rather, it suggests a theoretical framework for understanding poetry in digital media, and it offers one of many ways of approaching poetry. Indeed, to claim that this theoretical framework and approach should serve as a model, as if it should provide a new standard for solving challenges in poetry research, would be to create a hierarchy and a new origin. This is a way of thinking that is counter-productive to egalitarian and ecological structures in the computational network environment.

Further, the conception of the computational network environment corresponds with Hansen's argument that the media situation in the new millennium consists of "multi-scalar computational networks and [. . .] intelligent sensing technologies ranging from environmental sensors to the smart phones and other portable devices we now carry with us as a matter of course." (Hansen 2015, 23) Hansen describes a media-technological situation that connects humans and non-humans, events, expressions, experiences and sensations. This situation has an impact on how we experience and perceive the world. Perhaps the situation for poetry too has come this far, that media not only archive and serve as platforms for poetry, but that the future of poetry is inherent in new media systems that anticipate how poets write and readers read.¹²

One could also argue that contemporary poetry has entered "the age of digimodernism." With "digimodernism," Alan Kirby suggests another alternative cultural and aesthetic concept for our contemporary age and emphasizes the role of the digital:

'[D]igimodernism', properly understood as a contraction of 'digital modernism', is a pun: it's where digital technology meets textuality and text is (re) formulated by the fingers and thumbs (the digits) clicking and keying and pressing in the positive act of partial or obscurely collective textual elaboration. (Kirby 2009, 1)

According to Kirby, digimodernism is characterized by new opportunities for communication and production of texts on social media platforms. He includes new popular cultural phenomena and what he calls endless narratives as one of many "new" features of texts and cultural expressions. Furthermore, digimodernism can be described through texts that are "characterized by onwardness, haphazardness,

¹² I discuss this question more in detail in several of the analytical chapters of this book.

evanescence, redefined textual roles, evolving authorship, fluid textual boundaries, electronic digitality and evincing aesthetics of earnestness, apparent realness and infantilism.” (Kirby 2009, 155) In this enumeration, Kirby blends content-determined terms with form-oriented ones. It is fair to say that many of these terms sound familiar from poststructuralist hypertext theory such as Jay Bolter’s *Writing Space* (1991), George Landow’s *Hypertext: The Convergence of Contemporary Literary Theory and Technology* (1992) and Jane Yellowlee Douglas’ *The End of Books – or Books Without End?* (2001). More generally, they reflect poststructural thinking and postmodern aesthetics more than they provide an alternative to postmodernism.¹³ Many of the concepts of aesthetics presented by Kirby, are representative for postmodernism while others, e.g. infantilism, suggest an alternative aesthetics, though not necessarily because of digital media technology.

Furthermore, it is striking that Kirby does not include digital genres and text practices in his reflections on digimodernism. In fact, he claims that these genres and practices are missing so far. Kirby asks rhetorically: “Where are the digimodernist novels, poems, and plays? Who are the digimodernist writers?” (Kirby 2009, 218) Moreover, he answers: “it would be truer to argue that digital modernist literature is yet to come.” (Kirby 2009, 218) These questions and conclusions make it difficult to follow the argumentation in favor of digimodernism. The digital genres that Kirby calls for have made their entrance in the literary field long ago and represent those literary and aesthetic practices that best and most concretely testify to how literature has changed in the digital age. Digital narratives, poems and plays have been around for some decades, and the list of authors of digital literature is long, indeed too long to be rehearsed here.¹⁴ All together, these genres, practices and authors offer knowledge about the impact that digital media technology has on the way we communicate, as well as on how we write, distribute and read texts.

Most crucially, Kirby’s digimodernism does not take into account how deep digital media technology, not least algorithms and network organization, are involved in our culture and how they alter conceptions of human-machine relationships. When Kirby writes at the end of his book that “[i]t is almost possible to argue that digimodernist literature does not exist” (Kirby 2009, 218), he does not

¹³ Timotheus Vermeulen and Robin van den Akker make a similar argument (Vermeulen and van den Akker 2010, 3).

¹⁴ It should be enough to point in the direction of ELO’s collection, <https://directory.eliterature.org/>, ELMCIP’s international knowledge base, <https://elmcip.net/>, the archive of afsnlp, <http://afsnlp.dk/plogultra/> or larger digital collections like Deutsche Nationalbibliothek’s Digital collection, https://www.dnb.de/EN/Sammlungen/DigitaleSammlungen/digitaleSammlungen_node.html (5 December 2022).

grasp that contemporary literature in and across different media has long since become part of a digital culture, where computers at the most obvious level are involved in the production of literary texts.

I have claimed that poetry in programmable and network media is an event. To further qualify such a claim, I will in the following develop this idea and argue that in the computational network environment, poetry is an intermedial event on at least four levels: as poems, as code-based poems, as (most commonly) multimedia poems and as media-ecological poems. Therefore, to argue that poetry in the computational network environment is an event does not only concern the nature of ecology, where objects as events (according to Fullers notion quoted earlier in this chapter) are processes in a composition. More to the point, this claim engages both specific aspects of poetry as an art form and certain media-specific elements.

Computational events and flickering poems

It comes as no surprise that poetry has a temporal dimension and is an event. Poetry appears as sung poetry or as poetry film, is performed as poetry reading or poetry slam and includes performative media in its appearance on the page, specific site or screen. Moreover, Culler holds that a performative dimension is fundamental to and is embedded in all lyric poems. He argues that the lyric is a performative type of poem, contending that a poem is an “iterative and iterable performance of an event in the lyric present, in the special ‘now’, of lyric articulation.” (Culler 2015, 226) These notions of performativity and event are not exclusive to lyric poetry but are appropriate for other genres of poetry as well, especially due to the significance of the poetic utterance and the poem’s “nowness” in its articulation. Likewise, Derek Attridge argues that poetry is an event that occurs when it is read in a certain manner. “The poem is a human event,” Attridge writes (Attridge 2019, 1). He emphasizes “human” because the poem depends on a human reader to experience it as a poem. Even poetry in digital media requires a human reader to recognize it as a poem. In this respect, the poem becomes an event when a human reader reads it. Due to language’s semantic resources and physical properties, “its sounds, its silences, its rhythms, its syntactic sequencing, its movement through time”, it is, according to Attridge, recognized as a poem since its meaning “is something that happens.” (Attridge 2019, 2) Culler too is attentive to the articulation of the poem, whether this articulation is audible or represented by the imagination of a voice. He writes that the nowness of a poem is “a moment of time that is repeated every time the poem is read.” (Culler 2015, 295) The word “read” denotes, as it does in Attridge’s notion, a human activity.

In addition to recognizing the art form of “poetry-as-an-event,” regardless of the medium in which a poem is performed, poetry in digital media is also an event on a different level. In order to appear and perform on the screen and through speakers, this poetry is dependent upon computers that read codes. In programmable media, poems have a surface and a depth. They are, as Hayles puts it (not with regard to poetry, though), both “flat and deep.” (Hayles 2004) Poems in digital media are “deep” in a technical sense because they are processes run by computer codes.¹⁵ These processes are time-based events that take place below, or, taking account of cloud technology, above the surface. The poems are “numerical representations” (Manovich 2001), presented with the help of programming languages and binary codes, symbolized by 0s and 1s for electronic voltage curves. Poetry becomes, according to Hayles, “an event brought into existence when the program runs.” (Hayles 2006, 181) The phrase “brought into existence” implies that poetry in digital media has a non-fixed materiality, which means that the poems appear on the screen as “flickering signifiers,” (Hayles 1999, 25–28) a term that suggests poems to be brought to the screen in a continuous process, that is, as events. Therefore, Hayles writes that “it would be more accurate to call a digital text a process rather than an object.” (Hayles 2006, 184–185) Poems always presuppose a continuous distribution of data files between the underlying codes and the deep surface of the screen. Consequently, the two dimensions, the flat surface and the codes, are not separated. They are connected, held together by the machine that reads and writes (Hayles 2006, 182), since what appears on the surface is the result of algorithms that execute commands and machine-read information stored in computer cells and databases.

Hayles is concerned with how computer codes evoke poems on the surface and transforms them into events. For most poetry in digital media, the distinction between the two layers, the flat surface on the screen and the deep layer of codes, is clear. Again, code poetry, poetry in which the computer’s codes appear in whole or in part as print poems (see e.g. Funkhouser 2012, 255, Vorrath 2022), is an exception because the computer codes become part of the poem on the surface, that is, computer codes exist on the surface and below the surface. In this respect, code poetry transgresses media borders and reveals itself to be an intermedial genre. It contains and is based on what Irina Rajewsky in her theory of intermediality would call “intermedial references” (Rajewsky 2005, 50–52). The term is suggestive of how one medium refers to another medium, “as the structural adaption of media-specific aesthetic techniques.” (Rajewsky 2005, 52; see

¹⁵ This is a central argument in Rita Raley’s article “Code.surface || Code.depth” (2006) and a perspective that is critically discussed in Wiebke Vorrath’s sub-project “Beneath the Surface. Coded Writing and Writing as Code in Digital Poetry,” as part of the research project Poetry in the Digital Age, at Universität Hamburg.

also Benthien et al. 2019, 40) Intermedial references in poetry are e.g. ekphrasis or language used in a way that mimics another media. For instance, to write “photographically” is an intermedial reference (Rustad 2020). Now, most code poetry is digital but some also appears in books, where the codes are meant to be enjoyed and interpreted by a human reader. When codes appear in print, they cannot function as computer codes. Instead, they become intermedial references to computer codes in digital media and their numerical representations. Still, regardless of whether the poem appears on the screen in a human language or a computer language, it is run by the computer and is, for that reason, also an event.

Even though it is fair to claim, as Attridge does, that computers are not able, at least thus far in the history of artificial intelligence, to experience a poem as a poem (Attridge 2019, 2), computer codes conduct a form of reiteration in making the poem appear, and re-appear, on the screen. The process of “flickering signifiers,” or, if you like, “flickering poems”, is necessary for a poem to appear on a screen and is a performance that reiterates the poem. The computer makes the poem appear in the world again and again, and thus, it manifests the poetic and lyric present in moments of time.

However, the nowness of poetry in digital media is also a moment in time that is repeated every time the machine reads the code of the poem. On the one hand, this repetition can be a repetition that repeats a repetition. A quote is a decontextualized repetition in Culler’s theory, while recitation is a doubling of the quote’s “first” decontextualization. On the other, the repetition can be a repetition that drives the poem “towards breakdown, disruptions, innovation, and change.” (Hayles 2012, 13) In both cases, the nowness of the poem is repeated, but in the latter case, the machine does not perform the poem in a circle but in a spiral, in feedback and feedforward loops. Therefore, poems become events that change because they adapt to their medial environment, the computational network environment, upon which they feed.

Medial combinations

Whether as a second or later generation of poetry, poetry in digital media is most often multimedial, combining words, images, videos, music, etc. They are media combinations that more generally is “determined by the medial constellation constituting a given media product, which is to say the result or the very process of combining at least two conventionally distinct media or medial forms of articulation.”

(Rajewsky 2005, 45)¹⁶ Combinations of media move digital poetry closer towards other digital art forms. In this regard, it becomes a challenge to poetry research because it offers difficulties associated with categorizing these kinds of works in terms of genre. For this same reason, Hayles calls digital works in general “hopeful monsters” (Hayles 2008, 4). There is not enough space here to discuss all possible art forms and media to which poetry might refer, in print or on the screen. Therefore, I will only briefly discuss the relationship between poetry in digital media and media art here, two aesthetic media practices that in some cases have certain similarities. Even though I agree with those who claim that the field of media art might be a fruitful companion for understanding poetry in digital media, I also argue that it is helpful to uphold the attention on poetry through which to view the digital art form in question.

Media art is a term applied to art works that combine different art forms and art systems. From a literary point of view, the meaning in media art is, according to Claudia Benthien, Jordis Lau and Maraike M. Marxsen, “established through language [when it] inevitably enters into a relationship with other elements.” (Benthien, Lau and Marxsen 2018, 2) These scholars argue that media art can stage experimental encounters between visual, acoustic and textual dimensions; that it reconstructs, deconstructs or dissolves literary and textual practices; and that it brings forward frictional processes that lead both to the semantization and desemantization of sign systems (Benthien, Lau and Marxsen 2018, 2). This description of media art could be applied to works of poetry in digital media as well. The experimental strategies and destabilization processes in poetry (and literature) are among the most explored features in the early research in the field of digital literature, as mentioned earlier, particularly as they are related to narrative structures in digital literature. Likewise, poetry in digital media has contributed to these experimental practices.

Because of the many semiotic and aesthetic possibilities that come with network computers, Jason Nelson calls his digital poetry “a poetic playland.” (Nelson 2021, 337) Nelson uses hand-written language, graphics and interactivity in a combination of poetry and computer games. His digital poem “game, game, game and again game” (2007) expands our notion of what poetry can be and how it can work and be experienced. Nelson names this poem a retro-game, as it represents an alternative to the dominant clear-lined design in digital culture by re-entering “the hand-drawn, the messy and illogical into the digital, via a retro-game.”¹⁷

¹⁶ Rajewsky refers to the combination of basic media such as text, photography, graphics, video, speech and music. For a clarification of “basic media,” see Elleström (2010) or Chapter 1.

¹⁷ See <http://www.secretechnology.com/> (15 December 2022).

Poetry game, or game poetry, as media art and digital poetry, contributes to new art forms, to a continual destabilization of ways to categorize art and to a negotiation of established boundaries between genres and art forms.

Interestingly, Nelson himself terms his poetic computer games both digital art and digital poetry. In so doing, he suggests that there are no clear boundaries between the two and that a good alternative to discussions of genre is, rather than making a distinction, to approach a digital work as both. This notion goes well with Hayles' description of digital work as "hopeful monsters" and the recognition made by Roberto Simanowski in *Digital Art and Meaning* (2011) regarding challenges in categorizing digital works of art. Simanowski closely reads visual and concrete poetry, computer-generated poetry and interactive poetry and names these and other art forms that he engages with "digital art." In contradistinction to this view, Scott Rettberg, who in *Electronic Literature* (2019) includes many of the same genres as Simanowski does, regards these works as literature. These examples confirm that works in digital media struggle against fixed and final categorizations. In other words, they fulfill what Benthien, Lau and Marxsen describe as one of the functions of media art, namely to reconstruct, deconstruct and dissolve established boundaries.

Following Benthien, Lau and Marxsen's approach to media art through the lens of literariness, I argue that even though poetry in digital media often combines media and art forms and therefore could be regarded as media art, the poetic language and the combination of text, images and sound are significant for the works and how they appear. Letters and words – spoken or written – and poetic structures like rhythmic and metric forms, repetitions, syntactic sequences and eventualizations of poems as they move, for instance on a computer screen, are physical properties that make us experience and read the works as poetry. This is also a central approach in Benthien, Lau and Marxsen's exploration of poetic structures in media art (see Benthien, Lau and Marxsen 2019, 113–122). The above-mentioned features are significant to the understanding of poetry in digital media as poetry. They relate to Attridge's claim about what it takes to experience a poem as a poem (Attridge 2019) and are parallel to what Culler calls "effects of voicing, of aurality" (Culler 2015, 37); effects that not only appear in lyric poems but also in other genres of poetry. I contend that this effect is important in reading the respective texts in this book as poems, because many of the poems have a structure that creates the experience of "voicing." To quote Culler on this point, "to read something as lyric is allegedly to lend phenomenal form to something like a voice, to convince ourselves that we are hearing a voice." (Culler 2015, 35) These features are central to poetry on a printed page and to poetry on the screen and make a good argument for maintaining the focus on these works, or events, as poetry.

Ecological intermediations in the computational network environment

The fact that many poems wander between digital and analog media turns them into media ecological events, where the relevance of the distinction between digital and digitized poetry is, as I claimed earlier, lessened and replaced by an emphasis on reciprocal intermedial interactions. Indeed, one can argue that this intermedial travelling challenges the before-mentioned generations of poetry in digital media. The situation is one in which various generations are often placed in synchronic dialogue with one another. Indeed, a single poem might contain aspects from more than one generation. The change from first and second generations of poetry in digital media to the third and fourth does not suggest that poetry based on hypertext technology has reached the end of its history. Hypertext technology may still be engaged but is less prominent than it once was. Even though hypertext literature reached its climax in the late 1980s and early 1990s, contemporary poetry still involves hypertext poems. Nelson's digital poems are hypertextual and poetic games. In Scandinavia, the hiphop band Karpe published one of their lyrics, "Sasplussaspussy," as a hypertext poem (2019).¹⁸ Cautiously, one can contend that this synchronic dialogue between generations and the entwining of digital, digitalized and analog poetry are what define a fifth generation, a contemporary media ecological generation of poetry. Less cautiously, I argue that this entwining describes the situation of poetry in the computational network environment.

Poetry's wandering across media platforms too engages an intermedial approach, one that is similar to what Rajewsky terms "medial transposition" (Rajewsky 2005, 51) and which concerns the migration of texts between media, such as the adaptation of a novel into a film or the migration of a poem between a book and Instagram. It is a form of intermediality that engages media as technical media and emphasizes the intermedial travelling of poems. Still, in the case of poetry in the computational network environment, the migration is not linear but networked, that is, poems move between analog and digital media platforms in a network structure. This media ecology of poetry substantiates the obvious fact that print poetry no longer exists in isolation from other media, as if it ever did. Therefore, in order to grasp such a movement in which media do not exist in isolation from each other and in which no particular medialization is to be regarded as more important than any other one, I suggest to apply the term "intermediation." The term, which is theorized by Hayles among others, denotes "the spirit of multiple causality in

¹⁸ <https://sasplussaspussy.no/tekst>.

emphasizing interactions among media.” (Hayles 2005, 33) Intermediation refers to non-linear relations of media and of literary works that do not proceed from one medium to another in a single direction. Rather, the interaction is a result of intertwined causal relationships and multiple co-existing feedback loops. In this way, as Hayles notes, texts can “converge into digitality and simultaneously diverge into a robust media ecology in which new media represent and are represented in old media.” (Hayles 2005, 32) In other words, intermediation draws attention towards the complexity in poetry’s migration between media. It represents an alternative to concepts that present intermedial migrations as linear movements from one original medium to another. In this respect, one may pay too much attention on whether a poem is originally born in an analog or digital medium. Therefore, intermediation supports the blurring of the distinction between digitally born and digitalized poetry since both concepts draw attention to an origin/original.

With the purpose of addressing the situation of poetry in the framework of the computational network environment, I have described some of the recent changes in structures and processes concerning the production, distribution and reception of poetry. Therefore, I have outlined the computational and media ecological environment of contemporary poetry. I have included in the discussion three theoretical positions for approaching the relationship of poetry and media (media as neutral, media determinism and media as environment) with the purpose of arguing in favor of viewing media as an environment. Although media as a posthuman environment is the one that is the most adequate for the situation of contemporary poetry in the computational network environment, all three are to be regarded as theoretical or ideal models. In practice, the relation of poetry to media will vary and the outcome of the interaction between the two will differ from poem to poem. The point is that much contemporary poetry is inscribed and functions in a media environment that to varying degrees has an impact on the poems, simultaneously as the poems influence the media environment.

I have suggested that the relationship between poetry and media has historically been recognized either as non-existent or as media deterministic. The former position is dominant in much work in the theory of poetry, while the latter is apparent in poetic experimentations with media technologies. Both of these positions, media as neutral and media viewed as determining the making of poetry, maintain the subject-object relationship. Entering the realm of the posthuman, media as environment obviates binary thinking. Poetry and digital media can be thought of as being the subject and object for each other. So, rather than regarding media as neutral or as part of the goal of poetry, a new sensible and social environment of poetry and media should be postulated. Further, by combining Hayles’ posthumanism with the idea of media as environment, media become not only a source of inspiration but an agent that resists the poet’s creative process.

Programmable and network media are regarded as creative subjects in a posthuman media environment wherein poetry can be seamlessly articulated with machine reading. Concurrently, poetry might be an art form that makes machine reading and artificial intelligence visible and thus reflects on the computational network environment of which it is a part.