

Wojciech Drag, University of Wrocław, Poland

DOI: 10.17951/lsmll.2020.44.2.113-122

“A galaxy of signifiers”: David Clark’s *88 Constellations for Wittgenstein* as a Paradigm of the Barthesian Writerly/Plural Text

ABSTRACT

This article argues that David Clark’s digital biography *88 Constellations for Wittgenstein (to be played with the Left Hand)* (2008) meets all the criteria of a writerly/plural text as defined by Roland Barthes in *S/Z* (1970). The discussion focuses on the interactive and reversible structure of Clark’s work, as well as on the plurality and hybridity of its components. The experimental form of Wittgenstein’s biography is examined as an attempt to capture the elusiveness and the contradictions of its subject.

Keywords: electronic literature, digital biography, writerly text, hybridity, experimental life-writing, David Clark, *88 Constellations*

At the beginning of *S/Z*, Barthes (1970) proposes “a basic typology of texts” – a distinction between “what it is possible to write” and “what it is no longer possible to write” (pp. 3–4). The two categories are named “readerly” and “writerly” (or “plural”). The former constitute “the enormous mass of our literature” and are described by Barthes as mere “products” manufactured according to convention, designed to provide closure and a single meaning, while the latter do not conform to any structure, celebrate the plurality of their meanings and turn the reader from a passive “consumer” to a “producer” of the work (pp. 4–6). “The writerly text is not a thing”, declares Barthes, and adds, “we would have a hard time finding it in a bookstore” (p. 5). A bookshop is certainly no place to look for a work which I wish to present as a paradigmatic plural text – David Clark’s piece of electronic literature *88 Constellations for Wittgenstein (to be played with the Left Hand)* (2008). Although the Barthesian notion of the writerly text is frequently employed in literary criticism as a handy label for experimental and formally unconventional works, I wish to examine it more closely and indicate the remarkably strong connections between Barthes’s theory and Clark’s practice.

I will argue that *88 Constellations* – an interactive biography of the Austrian philosopher in the form of an interconnected network of stars, each of which contributes a biographical fact, a cultural reference or an association with its

Wojciech Drag, Instytut Filologii Angielskiej, Uniwersytet Wrocławski, Plac Uniwersytecki 1, 50-137 Wrocław, wojciech.drag@uwr.edu.pl, <https://orcid.org/0000-0002-9089-2465>



protagonist – bears an uncanny resemblance to the “image of a triumphant plural” conjured up by Barthes (1970) and defined as follows:

In this ideal text, the networks are many and interact, without any one of them being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one (p. 5).

I shall structure my discussion of *88 Constellations* by considering four of the main attributes of the writerly text: its interactive nature, reversibility, plurality and hybridity. During my formal analysis, I will comment on the ways in which specific solutions contribute to Clark’s artistic motive, which, as he has explained, was not so much “to tell Wittgenstein’s story” but rather “to organize stories, images, and ideas around the figure of Wittgenstein” (Clark, 2015, p. 295).

Canadian media artist and filmmaker, David Clark began working on a digital biography of Wittgenstein in 2004 and completed it four years later. *88 Constellations* was created in Flash, which makes it possible to combine text, sound, animation and video, as well as to provide an interactive framework. Upon clicking on the link <http://88constellations.net/88.html>, the reader (or, more appropriately, the user) is confronted with an introduction in the form of a brief voice-over narration accompanied by a simple animation. The voice of Canadian actor Neil Thompson (used consistently throughout *88 Constellations*) invites the user to take an active role in the work:

Join the dots. Join the dots together. Make pictures in the sky. Connect the muddle of our thinking to these drawings in the sky. This story is about a man named Wittgenstein. He was a philosopher. His life was a series of moments, and our story is a series of constellations. Join the dots.

Once the introduction is over, the user encounters the “home page” of *88 Constellations* – a black screen with two adjacent circles (arranged in the form of the symbol of infinity) presenting the image of a starry sky at night. The placing of the cursor on any fragment of either circle results in the appearance of lines connecting the nearby stars into a constellation, of which there are 88. Clicking on any part of a given constellation activates one of 88 multimodal vignettes, which by means of text, sound and visuals (graphic symbols, appropriated photography, drawings, animations and embedded film scenes) offer an insight into Wittgenstein’s life, ideas or legacy. Each constellation has a number, a name (such as Lynx, Hydra and Ursa Minor) and a title (such as *Tractatus*, *Infinity* and *Alan Turing*)¹ and takes a couple of

¹ Three constellations (*Leo*, *Gemini*, *Capricorn*) have the same names and titles. *Leo*, for instance, combines references to lions in Wittgenstein’s writing with solecisms by Samuel Goldwyn, one of the owners of Metro-Goldwyn-Mayer, whose famous logo contains an image of a lion.

minutes to survey. There is, as prescribed by Barthes (1970), no indication where to begin one's exploration of the Wittgensteinian storyworld; instead the user "gain[s] access to it by several entrances, none of which can be authoritatively declared to be the main one" (p. 5). As Clark (2015) has noted, the interlinked stories are "not arranged chronologically or even thematically" but "invite the viewer to move from association to association throughout the work" (p. 291).

The dots of individual constellations are to be joined and the biography's astoundingly wide range of reference is to be integrated in the mind of the user. Clark's investigation of Wittgenstein is not confined to the facts of his life and the ideas advanced in his philosophical writings but encompasses forays into the lives of Wittgenstein's contemporaries (such as Adolf Hitler, Charlie Chaplin and Alan Turing), as well as discussions of films made after Wittgenstein's death (Alfred Hitchcock's *Psycho*, Stanley Kubrick's *2001: A Space Odyssey* and Jean-Luc Godard's *Two or Three Things I Know About Her*) and recent events, such as the attack on the World Trade Center. An example of the intertextual richness of *88 Constellations* is Clark's use of the motif of the monolith, which serves as a symbol of Wittgenstein's notion of "that whereof we cannot speak" and is evoked in the context of *2001: A Space Odyssey*, Barrett Newman's sculpture *Voice of Fire*, The Who's album *Who's Next* and *9/11*. The related motif of silence is linked to the Miranda warning (the right to "remain silent" announced in the US to a criminal suspect upon arrest), Wittgenstein's weakness for film star Carmen Miranda and John Cage's *4'33"*. The connections suggested by *88 Constellations* are at times so obscure and esoteric that they have been compared to paranoid "delusions of reference" and to "apophenia" – "the practice of finding patterns in random data" (Clark, 2015, p. 291). Rettberg (2019) speaks of the "absurdist connectionism" of Clark's work, which, he maintains, "spins off from this central narrative [of Wittgenstein's life] into a web of connections that resembles a sophisticated conspiracy theory" (p. 84).

Clark has suggested that exploring the "associational structure" of *88 Constellations* is akin to the experience of "surfing the internet" (2005, p. 291). Intrigued by a specific idea or event in Wittgenstein's life, the user is indeed free to pursue that strand by surveying nearby constellations. The experience of Clark's work can also be marked by the same selectivity that accompanies navigating a website – some of the content will probably never be processed. Since *88 Constellations* is not equipped with any device indicating which parts of the work remain to be explored, it implicitly accepts that the user will most likely choose those constellations whose titles promise the most informative or engaging content. It is therefore very probable that "Wittgenstein's grave", "Adolf Hitler" or "Hollywood" will be selected more often than constellations with less evocative titles, such as "Hand" or "Pointing". The cherry-picking manner of reading encouraged by Clark is very similar to that of the average Internet user, who skims the multiple visual stimuli and confirms their wish to learn more about a given topic by clicking on the corresponding icon.

Hayles (2012) has pointed to Clark's work as a quintessential example of a recent literary development: "Competing for attention in the Web's information-intensive environment, narratives become smaller, less connected, tending toward an array to be sampled rather than a whole to be absorbed".

Analogies can also be found between the exploration of *88 Constellations* and the reading of classic examples of interactive literature. "Navigating its universe", notes Butler (n.d.), "is like playing a Choose Your Own Adventure". Besides having an influence on the order in which specific parts of the work are assimilated, the reader/user is in both cases addressed as "you". Whereas the child recipient of a CYOA novel is expected to cast themselves in the role of the hero of the second-person narrative, the user of *88 Constellations* is occasionally addressed by the narrator. In *Silence*, they are asked to interpret the silence of a man whose face is projected in the accompanying animation; in *Psycho* the user is placed in the role of Dr. Mildred Newman, Anthony Perkins's psychoanalyst, and is invited to imagine her gradual recognition of the analysand's double life. Clark's work also displays a formal affinity with shuffle narratives like Marc Saporta's *Composition no. 1*, which have been defined by Montfort and Husárová (2012) as works "consist[ing] of text segments that may be read in any order". As noted by the authors of "Shuffle Literature and the Hand of Fate", representatives of the genre tend to offer the opportunity merely to choose the order in which different components of the text are presented, without allowing for those changes to affect the storyworld of the work. *88 Constellations* shares that characteristic with shuffle narratives, as, by the end, provided that the user has indeed dutifully clicked on each of the 88 constellations, they will have assimilated the exact same content regardless of their chosen path. The only alterations in the content of specific parts can be made by pressing certain keys on the left-hand side of the keyboard and thus activating additional visual effects in animations (such as the appearance or disappearance of certain icons). That special feature, signalled in the work's subtitle – "(to be played with the Left Hand)," alludes to Wittgenstein's practice of playing the piano only with his left hand.

The comprehensive interactiveness of *88 Constellations* is closely linked with another quality of the writerly text, which – as prescribed by Barthes (1970) – "has no beginning" and is "reversible" (p. 5). Reversibility is the potential of a given work for being read or experienced in more than one pre-arranged manner or order. Serbian author Milorad Pavić has defined reversible arts as those that "enable the recipient to approach the work from various sides, or even to go around it and have a good look at it, changing the spot of the perspective, and the direction of [their] looking at it according to [their] own preference" (Pavić, 1998, pp. 142–143)². Architecture and the

² In his essay *Notes Toward the Musicality of Creative Disjunction, Or: Fiction by Collage*, Olsen (2005) elaborates on Pavić's distinction and calls reversible art "prismatic, multi-directional, rhizomic" (p. 131).

visual arts belong to that category. Music and literature, on the other hand, resemble "one-way roads on which everything moves from the beginning to the end, from birth to death." Still, Pavić (1998) declares that his ambition – in devising fictional works such as *Dictionary of the Khazars* (1984) – has been "to make literature, which is a nonreversible art, a reversible one" (p. 143). *88 Constellations* can certainly be regarded as part of that experimental tradition aiming to open up the literary work to the reader's involvement. In that respect, Clark's work is very much like the panoramic image of a starry sky at night which serves as its home page – it can be inspected in any direction, following a meticulous pattern or with no apparent design. Consequently, the emerging portrayal of Wittgenstein and his intellectual universe defies narrative patterns and rejects the clichés of cradle-to-grave biographies. Instead of a plot, a chronology and a cause-and-effect arrangement, Clark offers an assemblage of loosely connected facts, ideas and associations which are perfectly interchangeable.

By doing so, Clark opts for the logic of the database in what Lev Manovich in *The Language of New Media* sees as competition in the computer age between two fundamentally opposed cultural forms – the narrative and the database. *88 Constellations* does fit Manovich's definition of databases as "collections of items on which the user can perform various operations: view, navigate, search" and whose multiple components cannot be arranged into any kind of sequence (Manovich, 2001, p. 194)³. Hayles (2016) compares the experience of noting the surprising, often coincidental, links between constellations to being "inside a database" and "constructing a data derivative through correlations between seemingly disparate entries." "Caught in a maze of connecting paths," the users of *88 Constellations* are tempted by "the possibility of some overwhelming meaning that remains maddeningly just out of reach" (p. xiii).

However, the hope for a single master meaning that would account for the complexity of Clark's work, or of Wittgenstein's life, is ultimately dashed, as celebratory plurality and resistance to any form of reduction or unification are among the key properties of the writerly text. Barthes argues that to interpret such a work is "not to give it a (more or less justified, more or less free) meaning, but on the contrary to appreciate what *plural* constitutes it" [emphasis original] (p. 5)⁴. The impossibility of a single and conclusive explanation of any phenomenon is a leitmotif of *88 Constellations*, which frequently cites the Wittgensteinian dictum about the need for silence where language fails. In the earlier invoked *Silence*,

³ Among the discussed subtypes of the database, the "virtual museum" genre shares a particular affinity with Clark's work, which – like an interactive guide to an art gallery – invites their audience to take an individual tour of Wittgenstein's world by exploring the assembled multimedia resources in the order and at the pace of their own choosing.

⁴ In the competition diagnosed by Manovich, plurality is clearly aligned with the database, which rejects the elements that Barthes (1970) deems a stumbling block to a writerly text – "a narrative structure, a grammar, [and] a logic" (p. 6).

the image of a man's face serves as an invitation for the user to exercise their interpretive skills and determine the meaning of his silence. Among the numerous explanations proposed by the narrator are the man's "dark secret", his "impeccable manners", his "contempt", his being entirely "at peace" with himself, his dumbness and his full agreement with the interlocutor. The choice of one of those interpretations over any other would be arbitrary. Throughout *88 Constellations*, Clark revels in the polysemy of various symbols, such as the "\$" sign (a marker of the split subject according to Jacques Lacan), the Heil Hitler gesture and the duck/rabbit image discussed by Wittgenstein in *Philosophical Investigations*.

Barthes (1970) maintains that the plurality of meanings carried by the writerly text is guaranteed by "the infinity of language" (p. 6). Alongside the most obvious applicability of that statement to *88 Constellations* – as a product of language, it is polysemous – there is also its fortuitous relevance to the subject matter of Clark's work. Infinity and language are both among the principal interests of *88 Constellations*. The former is signalled in the very title of the work – the number 88 is, after all, composed of two infinity symbols placed at an angle. The sum of its referents, as demonstrated by Clark's "absurdist connectionism", could also be close to infinite: it is the number of constellations in the night sky and of keys in a piano; it lurks inside the number 1889 – the birth year of Wittgenstein, Chaplin and Hitler; it represents the age at which Chaplin died; it is the numerical equivalent of HH [Heil Hitler] and therefore a loaded and shunned number in Germany. The symbol of infinity is also a frame for all the 88 constellations as displayed on the home page and thus an entry point into Wittgenstein's universe. In the constellation titled *Infinity*, the narrator poses questions about the concept of the infinite while echoing some of Wittgenstein's philosophical concerns. The question about the night sky – "Is everything already there for us to see?" – appears to allude to Wittgenstein's idea that "nothing is hidden." In *Sky*, Clark juxtaposes the cliché "the sky is the limit" with Wittgenstein's dictum about the limits of one's language as the limits of one's world, bringing together the notions of infinity and language. The foundation of Wittgenstein's philosophy, language is the recurrent subject of speculation in voice-over monologues, which outline the biographical context and consider the implications of such Wittgensteinian ideas as the reduction of philosophy to language games and the impossibility of a private language.

Another way in which the plurality of *88 Constellations* is evoked is through its insistence on the protean character of its subject. In the most overtly biographical constellation titled *Ludwig Wittgenstein*, the narrator asks who Wittgenstein was after all and provides the following answer:

There were so many. There was the early Wittgenstein and the late Wittgenstein. And, of course, there is now just the late Wittgenstein. He was a boy who didn't talk until he was four years old.

He was an engineer who designed propellers. He was a schoolteacher in rural Austria. He was an architect who designed an elaborate Modernist house for his wealthy sister. He was one of the richest men in Europe after his father died but he gave all his money away and lived off of his wages. He was a whistler and a lover of music. He was an aesthete. He was a homosexual. He was an exile. He was a lover of movies and pulp fiction. He was a Cambridge professor who shouted down his opponents in the moral sciences club. He published one thin book but when he died he left 20,000 pages of notes.

Some of the above labels (a homosexual, an aesthete, a rich man who gives everything away) could easily constitute the lens through which a biographer might present Wittgenstein's life anew. Clark (2015), however, is not interested in finding a new "take" on his subject or in revealing any "truth" about him. As the author has admitted, *88 Constellations* was conceived as a "meta-biography" – an "accumulation" of information gathered in existing biographies (p. 292)⁵. Not privileging any particular interpretation, Clark's work remains "a galaxy of signifiers, not a structure of signifieds" (Barthes, 1970, p. 5). The earlier cited enumeration of Wittgenstein's multiple selves also echoes the work's consistent interest in doubling. In the constellation called "Doubles", the narrator states, "you were always at least two people, perhaps more". A moment later, he quotes the philosopher's remark after being caught conversing with himself: "I was talking to a very dear friend of mine – myself." Wittgenstein's writing, particularly *Philosophical Investigations*, is also described as enacting an ongoing dialogue with the other in oneself.

By emphasizing the plurality and elusiveness of Wittgenstein, Clark adopts a similar strategy to that employed by David E. Nye (1983) in *The Invented Self: An Anti-Biography, from Documents of Thomas A. Edison*, where the biographical subject is not presented as "a unitary object" but "becomes only a series of meeting points, a pattern of possibilities ... a set of relationships" (pp. 12–13). Prager and Hanneschläger (2017) view that approach as anticipating the emerging genre of digital (or online) biography, of which *88 Constellations* is an example. In digital biography, they argue, "the subject is dissolved into a space of possibility comprising data, objects ... and interchangeable fragments" (p. 259)⁶. The dissolution of the stable and coherent subject is achieved through a construction of the self as a "network" of crisscrossing relations (p. 259)⁷.

⁵ Rettberg (2019) has called *88 Constellations* an example of "postmodern historiography" (p. 85), whereas van Dijk (2014) argues that Clark conceives of history as "the choice of one route amongst many" (p. 121).

⁶ The representation of the self as an assemblage of information is discussed by Solove (2004) in *The Digital Person*: "Similar to a Seurat painting, where a multitude of dots juxtaposed together form a picture, bits of information when aggregated paint a portrait of a person" (p. 44).

⁷ Prager and Hanneschläger (2017) cite Paul Longley Arthur's remark made in the context of the online biography that "people exist as networks" (p. 259).

88 Constellations proposes networks of constellations into which the content of individual parts could be arranged; when exploring 4'33", for instance, the suggested network comprises *Silence*, *John Cage*, *Piano*, *Tractatus* and *Ludwig Wittgenstein*. In accordance with Barthes (1970), "the networks are many and interact, without any one of them being able to surpass the rest" (p. 5).

In a commentary on his own treatment of the genre, Clark explains, "I use the facts of Wittgenstein's life not to create a portrait with an internal consistency but instead to emphasize the external relations of his life to the outside world". Exposing such "relations of exteriority", Clark (2015) adds, is a "distinctive feature of the hyperlinked world of digital media". It is also "the crux of what can be done in an online biography" – an indication of the myriad ways in which the life and work of a given person relate to our time (pp. 295–296). Hence the frequent occurrence in *88 Constellations* of the earlier noted references to events and films postdating Wittgenstein's death. In *Psycho*, a constellation asserting a connection between Anthony Perkins's role of Norman Bates and the actor's conflicted self, the narrator remarks, "you know how those things echo into the future"⁸. Exploring the echoes of Wittgenstein in the digital world of today is precisely what Clark's project sets out to do.

A related notion to plurality is the hybridity of the writerly text – the last aspect I wish to consider. Barthes (1970) proposes, "The writerly is the novelistic without the novel, poetry without the poem, the essay without the dissertation, writing without style, production without product, structuration without structure" (p. 5). While incorporating aspects of many genres, the plural text evades classification. In *88 Constellations*, the novelistic, the poetic and the essayistic co-exist and interpenetrate. Of the three conventions, essayism predominates as the approach best suited to an intellectual biography of a philosopher. Constellations such as *Certainty*, *Pointing* and *Facts Not Things* are, in fact, illustrated mini-essays taking as their point of departure a specific principle of Wittgenstein's philosophy. While Clark does not overtly fictionalise Wittgenstein's life⁹, *88 Constellations* demonstrates a postmodern awareness of the impossibility of presenting an account of a life without making recourse to literary tropes. In the introductory monologue, the narrator signals this by referring to the work as a "story" about "a man named Wittgenstein." Whereas the fictional or the novelistic is incorporated rather subtly, the poetic elements

⁸ Van Dijk (2014) proposes that *88 Constellations* is a "mediation of cultural memory" demonstrating "how the past is always connected to the present" (p. 121).

⁹ A rare and humorous instance of fictionalisation occurs in a constellation titled *A Wonderful Life*, which turns Wittgenstein into a protagonist of a feature film – the philosopher's life is recast as an altered plot of Frank Capra's Christmas classic *It's A Wonderful Life* (1946). In it, under the influence of an angel representing Bertrand Russell, Wittgenstein realises on his deathbed that despite his keenly felt unhappiness he has had a "wonderful life".

are immediately apparent. In constellation number one (titled *88*), the narrator delivers the following rhymed passage: "Constellations and piano keys. Two upright infinities. Two fat ladies. 1, 8, 8, 9. Chaplin, Hitler and Wittgenstein. Star-crossed sons of fate. Born to love and born to hate. One would last to 88". Besides the occasional use of rhyme, Clark regularly employs parallelisms and repetition and shows such attention to language that the effect is unmistakably poetic, as is the case with the opening of the constellation titled *World*:

This is the world as I found it. This is the world. The whole wide world. The world is flat. The world is round. Money makes the world go round. All around the world. All around the first world, the third world, the new world and the old world. Hello, world. Goodbye, cruel world.

In *Aesthetic Animism: Digital Poetry's Ontological Implications*, Johnston (2016) proposes that *88 Constellations* is "in effect a poem". Johnston also calls it "a consummate example of hybrid interactivity, future cinema, Net art, and scholarship", which succeeds in merging "the dichotomies of abstraction/figuration, analytic/affect, and materiality/ontology" (p. 95)¹⁰. Among other ways in which the hybridity of Clark's work manifests itself is in its postmodern fusion of high and popular culture – in the unlikely marriage of Bertrand Russell and Carmen Miranda and of Frank Capra and Jean-Luc Godard.

In its interactive and reversible structure and its commitment to radical plurality and multifaceted hybridity, *88 Constellations for Wittgenstein* meets all the criteria of the writerly text as set by Barthes in *S/Z*. Undoubtedly, its status as a work of electronic literature greatly facilitates the enactment of certain aspects of the Barthesian ideal¹¹. To a large extent, however, the novelty and diversity of its form arise from Clark's ambition to construct a work capable of evoking the remarkable complexity and elusiveness of Wittgenstein's biography. The numerous blind spots and contradictions marking the philosopher's life and work are conveyed more effectively by inviting the audience to take an active role in assessing their significance. Similarly, the variety and richness of Wittgenstein's intellectual legacy is made all the more apparent by being signalled by a wealth of diverse references and multiple media. In that respect, *88 Constellations* could be viewed – alongside *Roland Barthes by Roland Barthes* (1975), Art Spiegelman's *Maus* (1980) and the earlier mentioned *The Invented*

¹⁰ Johnston (2016) also emphasizes the musical qualities of *88 Constellations*, such as Clark's use of recurrent themes functioning like "fugue motifs" and the "contrapuntal" quality of its "sparse, elegant and effective" soundtrack (p. 96).

¹¹ The link between Barthes's notion and the possibilities of digital literature has been noted by Cornis-Pope (2014). In the introduction to his edited volume *New Literary Hybrids in the Age of Multimedia Expression*, he observes, "In its arborescent, often multimedia structure, hypertext approaches Roland Barthes's definition of the 'plural text,' proposed well in advance of the age of electronic textuality" (p. 3).

Self by David E. Nye – as an example of what Novak (2017) calls “experiments in life-writing” – works that “push at the boundaries of existing forms to mould them into something that better suits the writer’s efforts of representation”, which frequently involves “ostentatiously” incorporating elements not associated with auto/biography (pp. 4, 15).

References

- Barthes, R. (1970). *S/Z*. (R. Miller, Trans.). Malden: Blackwell.
- Butler, K. (n.d.). Wayfinding in Wittgenstein’s World: 88 Constellations. *Brain Pickings*. Retrieved January 1, 2020, from <https://www.brainpickings.org/2010/02/03/88-constellations/>.
- Clark, D. (2008). *88 Constellations for Wittgenstein (to be played with the Left Hand)*. Retrieved January 1, 2020, from <http://88constellations.net/88.html>.
- Clark, D. (2015). Pictures in the stars: *88 constellations for Wittgenstein* and the online “biography”. *Biography*, 38(2), 290–296.
- Cornis-Pope, M. (2014). Literature and multimedia through the latter half of the twentieth and early twenty-first century. In M. Cornis-Pope (Ed.), *New Literary Hybrids in the Age of Multimedia Expression: Crossing Borders, Crossing Genres* (pp. 3–23). Amsterdam: John Benjamins.
- Hayles, N. K. (2012). 88 constellations for Wittgenstein. In *Medias Res*. Retrieved January 1, 2020, from <http://mediacommons.org/imr/2012/02/03/88-constellations-wittgensten>.
- Hayles, N. K. (2016). Foreword. In S. Groes (Ed.), *Memory in the Twenty-First Century* (pp. x-xiii). Basingstoke: Palgrave Macmillan.
- Johnston, D. J. (2016). *Aesthetic Animism: Digital Poetry’s Ontological Implications*. Cambridge: MIT Press.
- Manovich, L. (2001). *The Language of New Media*. Cambridge: MIT Press.
- Montfort, N., & Husárová, Z. (2012). Shuffle literature and the hand of fate. *electronic book review*. Retrieved January 1, 2020, from <https://electronicbookreview.com/essay/shuffle-literature-and-the-hand-of-fate/>.
- Novak, J. (2017). Experiments in life-writing: Introduction. In L. Boldrini, & J. Novak (Eds.), *Experiments in Life-Writing: Intersections of Auto/Biography and Fiction* (pp. 1–36). London: Palgrave Macmillan.
- Nye, D. E. (1983). *The Invented Self: An Anti-Biography, from Documents of Thomas A. Edison*. Odense: Odense University Press.
- Olsen, L. (2005). Notes toward the musicality of creative disjunction, or: Fiction by collage. *Symploke*, 12(1), 130–135.
- Pavić, M. (1984). *Dictionary of the Khazars*. London: Vintage.
- Pavić, M. (1998). The beginning and the end of reading – The beginning and the end of the novel. *Review of Contemporary Fiction*, 18(2), 142–146.
- Prager, K., & Hanneschläger, V. (2017). From “anti-biography” to online biography? In W. Hemecker, & E. Saunders (Eds.), *Biography in Theory: Key Texts with Commentaries* (pp. 256–262). Berlin: Walter de Gruyter.
- Rettberg, S. (2019). *Electronic Literature*. Cambridge: Polity Press.
- Solove, D. J. (2004). *The Digital Person: Technology and Privacy in the Information Age*. New York: New York University Press.
- Spiegelman, A. (1980). *The Complete Maus*. New York: Pantheon.
- Van Dijk, Y. (2014). Picking up the pieces: History and memory in European digital literature. In M. Cornis-Pope (Ed.), *New Literary Hybrids in the Age of Multimedia Expression: Crossing Borders, Crossing Genres* (pp. 107–122). Amsterdam: John Benjamins.