

Moving text in avant-garde poetry: Towards a poetics of textual motion

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Abstract

Recent innovations in digital environments may suggest that the possibility to manipulate the literal movement of the text could be one of the essential variables separating digital literature from printed literature. This bipolar distinction between digital and print media hides, however, a complex historical background. A fuller comprehension of movement as a variable in literature calls for the clarification of the historical development from the "analogies of movement" in printed literature to the innovations in video art, experimental film and multimedia poetry.

In classifying types of textual movement at least the following questions are relevant: What can be kinetic in the poetic text? How does the movement take place? Where does it take place? What is the result of the movement? And finally, what (or who) makes the text move? The article develops conceptual divisions that make answering these questions possible and thus helps to make the question of the specificity of digitally manipulated movement more precise.

It has been suggested that the possibility to manipulate textual motion could be one of the decisive dividing lines between digital literature and print literature. Yet it must be noted immediately that the distinction between digital and print media is indefinite and can be - and has been - justifiably questioned.¹ Therefore one could attempt to bracket questions concerning digital literature or digital kinetic literature as a genre at least for a while and to focus on motion as a means of expression in literature instead.² To support this methodical decision one can argue that a fuller comprehension of possibilities motion offers for literature calls for the clarification of the complex historical development in which literature, other media and technology have influenced each other.

The following article opens up four tasks for the study of textual motion: 1. to trace the historical development through which textual motion has become a means of expression in avant-garde poetry and/or in the questioning of the borders of literature; 2. to describe and analyze different manifestations of motion in literary

texts; 3. to reflect theoretically on the conceptual problems posed by such phenomena, and finally 4. to sketch a typology of variables of textual motion independent of the technology used in producing a particular text. In the following my examples come from the tradition(s) of avant-garde poetry by which I mean, in this particular context, the ongoing exploration of the possibilities and limitations of the materiality of language. I leave the question open if my observations and suggestions can be applied to other forms of writing as well.

1. Early history of textual motion

“There have been signs throughout our reading of the poems that other strong kinetic impulses are at work in contemporary poetry, but they have not yet arrived at the synthesis necessary in the artistic consciousness to bring them into definitive formal expression. The kinetic poem may still be in its infancy.” (Mary Ellen Solt)

One could begin tracing the history of textual motion from the “analogies of motion” in written text, be it inscribed on paper, stone or on any other material. To make it clearer what I mean by analogy here let me refer to a couple of texts from the Futurist movement in the beginning of the 20th century. The Futurist ideas of typographical revolution and of liberating words and letters from the chains of syntactical logic are well known. Less familiar may be F.T. Marinetti’s project of *temporalizing typography* and introducing motion and velocity to literature in the similar fashion it had been done in Futurist painting. Following John J. White one can justifiably argue that instead of reaching for a image-like simultaneity “Futurist poetry is more likely to advance towards its goal of rendering dynamism typographically by using shaped writing to indicate *lines of movement*” (White 1989, 18, his emphasis).

The analogy of motion means thus that the reader is invited to imagine that the letters and words *literally* move in space. This is different from a conventional metaphor of textual movement or dynamics. The analogy can be produced in many different ways: by repeating a letter, to begin with, connecting this set with other letters and giving thus formed chain a direction or a “path” (as in Marinetti’s poem “8 anime in una bomba”, 1919); by repeating a word, a phrase or a larger textual unit and constructing a path through which the unit can be imagined to be moving (in all of these cases, of course, the different phases of the “motion” remain simultaneously visible). Another possibility is to grow or diminish the size of the letters used. In the poem “Zang tumb tumb” (1914) Marinetti writes the words *poesia nascere* making letters grow from left to right as if the words were approaching or passing the reader.³ Moreover, in the last case the suggested

impression of motion has a metapoetic function due to its connection with the idea of the "birth of poetry". From this point of view one could re-read Futurist and other practices of the "Iconic"; a possibility referred to but not carried through in White's seminal study on Futurist literary innovations.

The analogy of motion is more systematically developed in the work Concretist poets from the 50's onwards. One "official" sign of this was the way the kinetic was granted the status of a major poetic parameter together with the visual and the phonetic in 1964, when The First International Exhibition of Concrete and Kinetic Poetry was held in Cambridge. According to Mike Weaver, the organizer of the event, a kinetic poem is "a visual succession" in which "the dimensions of the visual figure are extended to produce a temporal configuration only possible by the sense of succession" (cited in Solt 1968).

It is not difficult find kinetic experiments to illustrate Weaver's definition in Concretist works by Eugen Gomringer, Ernst Jandl, Claus Bremer, Reinhard Döhl, and others. One obvious example is Bremer's untitled poem from 1970 (www.literaturnische.de/gege-bremer.htm): reading the poem from up to bottom one notices that the letters of each of the three words *ein Text passiert* appear one by one and disappear in the same way (and thus creating an impression of being typed on the page in "real time"). In another untitled Concretist poem by Döhl, the letters of the words *geht* and *kommt* appear ("come") and disappear ("go") likewise one by one. In this case, however, the middle verse of the wind vane -like stanza shows the front side of the word *kommt* and the backside of *geht*. Comparing the three stanzas or versions of the appearing-disappearing process Döhl has put next to each other one can interpret that the letters turn around the axis of the letter *t* in the word *kommt* (a kind of analogy of *rotation* in three-dimensional space).

For a fuller picture of different forms of "print kinetism" one should analyze the Concretist interest in moving images and in techniques of inviting reader to literally manipulate the text, turn it around, to look at it from different angles in an expectation of a textual-pictorial anamorphosis, and to fold and unfold the pages (see Drucker 1995). A curious borderline case toward automatically animated poetry is the flipbook technique used by Emmet Williams to realized his text "Sweethearts" (1967). Here the impression of textual motion requires that the reader moves (flicks) and looks at the pages from a certain angle while flicking them.

Historically, the most important step beyond these analogies of motion was taken with the help of electronics, which coupled machines typical of the larger phenomenon of kinetic art with Concretist, Lettrist and other traditions. Alongside with it go the developments in moving images with which we can speak of *virtual motion* made possible by the manipulation of light. The use of text and letters in experimental film and animation art can be seen to prefigure contemporary forms of textual motion. Yet, at least to my knowledge, these traditions have not been

given enough attention in the history of avant-garde art in general; in his history of experimental film A.L. Rees (1999) does make a reference to the tradition of *cine-poems* beginning with the Futurists, but does not set about to study the specific uses of text as a cinematic device in a detailed way. One could ask if the traditional (metaphysical) opposition between image and text is still guiding the theory and history of cinema with the result of practices of visual-kinetic text being marginalized.

In the last decades of the 20th century many writers have been interested in the expressional possibilities offered by the democratization of the moving image, especially by the video media. One result from this is the video poetry developed, among others, by E.M. Melo e Castro, Richard Kostelanetz and Arnaldo Antunes from the 60's onwards. If one were to trace a thorough history of the virtual textual motion, the tradition of video and multimedia poetry should be taken into consideration. On the other hand, it could also be fruitful to examine how video artists have experimented with the so-called natural language and linguistic articulation. Here I'm thinking especially of Gary Hill whose work explores the relationships between the "videogram" and *Wortvorstellung* in its different aspects, the sound-image, the visual letter-image, the motor speech image and the motor writing-image (to use Freud's terms). Hill's *Primarily Speaking* (1981-83) translates speech articulation into camera movements in space and investigates different orders of representation in a dialogue of speech-writing and produces surprising combinations of familiar phrases. In *URA ARU* (the backside exists) (1985-86) the direction from which the word appears on the screen suggests an order of reading (from left to right; from up to bottom - or vice versa); the semantic relation between the word and the image is transformed according to the applied convention of reading.

2. Examples of motion in contemporary poetry

From the 60's onwards the possibilities of moving text have been developed in many hybrid forms combining written text with video and film, electronics, and digital technology. In poetry the result has been a multitude of genres and subgenres labelled in so many ways that one cannot escape from an impression of the invention of a new poetic genre as an end in itself. There is first of all "kinetic poetry" sometimes read as a continuation in the Concretist tradition (e.g., by Décio Pignatari), *clip-poemas* (by Augusto de Campos), *anipoemas* (by Ana Maria Uribe), cin(e)poetry (by George Aguilar) and the above mentioned video poetry; there are the general and vague concepts of digital poetry, computer poetry and hypermedia poetry, as well as more specific ones of "programmed animated poetry" (by Philippe

Bootz and the LAIRE group), "click poetry" (by David Knoebel), "cyberpoetry" (by Komninos Zervos), "softpoetry" (by Robert Kendall), and "holopoetry" (by Eduardo Kac) etc.⁴ In the following, however, I put the terminological problems aside and focus instead on describing a few examples of the already applied ways of manipulating motion in avant-garde poetry. The following list does not pretend to exhaust all the different motional devices but it tries to give an overview of the existing qualitative variety.

1. In the simplest type words or verses move across the screen and remain otherwise unchanged. This is familiar enough and is manifested in many different forms of electronic art and moving images; I mention only two recent examples, the "karaoke poetry" project introduced to the Finnish audience last year and Sarah Townsend's "Diver". In "Diver" the text moves verse by verse upwards across the screen and disappears into the water-like background.

2. In Dan Waber's "Strings" a straight line turns into a word which can move out of the view or transform into another word.

3. "Beer" by Komninos Zervos combines change and movement as the letters transform into other ones, approach and withdraw (grow and diminish on the screen), lose their recognizable form, and then shape into new three- or four-letter words. In the end of Miekal And's "Seedsigns" the letters of the name "Philadelpho" move into a position where they overlap and become unreadable.

4. Brian Kim Stefans' "The Dreamlife of Letters" is a film-like poem, which moves letters, syllables and words in a variety of ways. It shows how letters combine into words and, at the same time, how certain letters (especially initials) can gather together stems of words thus producing at best surprising visual and conceptual connections between them. In addition, "The Dreamlife of Letters" is particularly inventive in making letters and words appear to the screen and disappear from it in different ways.

5. In "Seattle Drift" (1997) by Jim Andrews the reader is a user of the machine as well. S/he is given three possibilities: by clicking the button "Do the text" the words in the poem drift slowly off the screen, each one in its own path and by its own speed; by clicking "Stop the text" the movement stops giving a new spatial distribution of words, a new poem so to speak. With "Discipline the text" the text returns to its starting position.

6. "Life, A Navigation" by Komninos Zervos is a "virtual reality poem" in which the text can be zoomed by using the keyboard option key and the control key. By clicking and dragging the mouse the reader/user can make the words move to the left or to the right. The words create here a three-dimensional space inside which the position of the reader/user as the perceiver is located: one can move towards the words or distant oneself from them. Furthermore, space and movement are here conceptual,

though in a simple way: by approaching the word “sex” you distant yourself from the word “love” (sic). Be that as it may, this poem gives us a model of constructing conceptual spaces with words and their spatial relations (proximity, oppositionality etc.). A more nuanced application of the same principle can be found in Eduardo Kac’s navigational poems like “Secret” and “Letter” (both in 1996).

7. In David Knoebel’s “Wheels” the reader/user can navigate in the three-dimensional space in which the words and verses hang. Some of the textual elements move by themselves in depth; they rotate in their intersecting orbits, as well as around their own axes. The centres of the orbits being transparent the backsides of the words and phrases can be seen too.

In the untitled virtual space by the group Squid Soup the reader/user can move in a virtual “room” by moving the mouse. The walls in this room consist of letters, and by clicking them the reader/user can release letters and sounds to “float” between the walls; their motion is programmed but there is a possibility to control the movement and to gather the letters together. A more poetic application can be found in Max Dunlop’s “Orbital” in which the words change their position constantly reacting to the movement of the mouse.

8. The visitor entering David Small’s installations like “Stream of Consciousness” (1998), “The Talmud Project” (2000) and “The Illuminated Manuscript” (2002) (see review in dd) can make the text move with different “haptic” interfaces. In the author’s own words, in “Stream of Consciousness” “water briskly flows down a series of cascades into a glowing pool. Projected on the surface of the pool and flowing as if they were caught in the water’s grasp are a tangle of words. You can reach out and touch the flow, blocking it or stirring up the words causing them to grow and divide, morphing into new words that are pulled into the drain and pumped back to the head of the stream to tumble down again.”⁵ In “Illuminated Manuscript” the pages in a hand-made book situated in a dark room function as a screen onto which the text is projected; the sensors react to the movement of hands and to the turning of pages. This enables the visitor to transfer text blocks from one virtual position to another, “to disrupt, combine and manipulate the text on each page”.

9. “Arteroids” by Jim Andrews (see review in dd) is a computer game in which the reader/user can move the word *desire* on the screen and shoot the other approaching words with it, break them into their constituent parts some of which remain readable on the screen afterwards. The user can also introduce new textual elements into the game, compose and edit the text to be animated. Thus we can imagine a computer game, which gives the reader/user a possibility to gather letters together in virtual space, make new syntactical and semantic combinations with them, break or destroy others and fight the textual adversary, be it a machine or another human being.

10. Eduardo Kac's work shows sensitivity to the different in-betweens in which a sign loses its identity and becomes other. "Reversed Mirror" (1997), a digital videopoem, deals with "the subtle dissolution and reconfiguration of verbal particles". These dilatory states are further explored in Kac's holopoetry, for example in "Souvenir d'Andromeda" and "Adhuc", which combines holography, film and digital animation. Here textual motion and change are made dependent on the reader's movements as a perceiver."(see www.ekac.org/allholopoems.html).

11. Though the possibility given to the reader of modifying and adding elements into a kinetic text is easily imaginable, "Arteroids" is the only work in which I have found it in practice ⁶

3. Towards a poetics of textual motion

"The walled-in voice strikes against the rafters, the words come apart, bits and pieces of sentences are separated, disarticulated parts begin to circulate through the corridors, become fixed for a round or two, translated each other, become rejoined, bounce off each other, contradict each other, make trouble, tell on each other, come back like answers, organize their exchanges, protect each other, institute an internal commerce, take themselves for a dialogue."
(Jacques Derrida, *Dissemination*)

To my knowledge the existing devices of textual motion described above and the many possible ways of combining them have yet not been adequately theorized neither in literary criticism nor in new media research.⁷ Furthermore, because the thematic of motion crosses over borders between the study of literature, the study of visual arts and film theory and possibly of other branches of knowledge as well, it is unclear what kind of a conceptual frame would suit the analysis of these kinds of phenomena. Thus one of the unavoidable tasks in the line of research sketched here is to reflect the theoretical problems caused by this state of affairs

Before I start sketching a conceptual grid for descriptive purposes, a general philosophical remark: motion can always be used to give support to the illusion of "living speech" and thus supplement a lack for which writing has been accused from the days of Socrates. Motion can be thought to animate the letters, *give them life*, make them like living beings (frequently used lure in children's animations and in commercials). The text moving on the screen can be seen as a living copy of a living speech, which has its source in the speaking subject, its father. According to the same logic, it can be seen as a well-off orphan who is able to live independently of the father's presence and thus, so to speak, to take the place of the father.⁸ Is it

possible to describe textual motion beyond the opposition between living speech and dead writing?

In conceptualizing textual motion we could begin with the following rough questions: What moves in the kinetic text? How does the motion take place and in relation to what it should be measured? Where does the motion take place? What is the result of the motion? What (or who) makes the text move? The possible poetics of textual motion should develop conceptual divisions that make answering these and other more elaborated questions possible.

The first question can be approached with semio-linguistic vocabulary. What moves in the kinetic text are signs - letters, syllables, words, sentences and larger textual units. As is well known, semiotics approaches signification as a process of combination and selection of signs that result in a particular text. From this point of view the essential difference between a printed text and an automatically kinetic text could be that by making the textual units move the latter *shows* the process of selection and combination without producing (or without needing to produce) a static text as a result. However, this process can still be analyzed by applying the Jakobsonian-Lacanian distinction between metaphor and metonymy. Lacan sees the "signifier" - signifying element in general - as a temporal and non-linear process. Metonymy means in this context the combination of two signifiers in any possible dimension and to any direction; metaphor means the possibility of creation new meanings relevant to the subject when the signifiers merge with each other or replace one another (or fail to do it). A kinetic text can be thought to dramatize or to *make visible* the movement of the signifying chain. However, if we follow Derrida, a textual element begins to signify only by differing from and deferring other elements. This *différance* is nothing *visible* in itself, it cannot be reduced to perceived positive terms, be it letters or words or whatever, and it does not limit itself inside the borders of any empirical text in a conventional sense. Thus the motion of letters or other units that are said to be "already constituted" in a kinetic text cannot be equated with the signifying process itself. (In the Derridean context the same applies to text and to image in a conventional sense.)

Eduardo Kac and Philippe Bootz have approached this problematic in their theoretical texts on textual motion. According to the latter (2000), programmed animated poetry (or literature) is one of the main branches in "computer literature" together with automatic text generators and hypertexts. Bootz sees a major dividing line between animated literature developed by the French group LAIRE and visual kinetic literature. Animated poetry does not deal with already constituted phrases or sentences which move but with a "dynamic grammar" in which empty spaces turn into letters, signs change their form, the order of the words changes and grammatical functions of textual units vary in the course of time. According to Kac (1996) holopoetry treats, likewise "the word as an immaterial form, that is, as a sign that can change or dissolve into thin air, breaking its formal stiffness". In Kac's

holopoems it becomes difficult to draw a clear line between textual motion and change. Here we are not dealing with the motion of already constituted verbal units but with the appearance and disappearance of "fluid" signs that change their configuration in time. Kac hints that this fluidity can present a challenge to the verbal discourse trying to interpret it: "the meanings of in-between configurations can not be substituted by verbal description"; and the gaps between signs "do not point to anything except for the potential presence of graphemes. The voids are not to be 'seen', unlike the white on the page. They are quite literal interplay of absence and presence."

In my opinion, while we should be attentive to the essential resistance this interplay presents to verbal expression and to conceptual thinking in general, the challenge should be taken to develop means of analyzing and describing the transitional stages between recognizable letters (e.g. in the mode of "t-becoming-k") or between a void or a background and a textual unit. One possible inspiration in this line of research could be Douglas Hofstadter's and Gary McGraw's (1995) experiments with the mathematization of "gridletters" and "gridfonts".⁹

Analysis of motion has long been a part of the study of painting and "visual rhetoric". To quote a well-known example, Alberti writes in his *De Pictura* (1435): "Everything which changes position has seven directions of movement, either up or down or right or left, or going away in the distance or coming towards us; and the seventh is going around in a circle. I want all these seven movements to be in a painting." Alberti analyzes motion in painting in relation to a static background and from the point of view of a stationary beholder. Further, motion has its model in the movements of the human body, and in the classical tradition of rhetoric which Alberti continues, the movements of the body correspond to the movements of mind, that is, feelings. Thus the (interrupted) bodily movements and gestures we see in a painting are to be understood as *exteriorized feeling* following a fixed code (nature).

My purpose of quoting Alberti is not to present his rhetorical approach as a model, quite the contrary; in my opinion the analysis of textual motion should free itself first from this antropomorphic and metaphysical foundation which determines art as imitation of the natural human body which in its turn reflects natural human feelings, and secondly from the model of *Vorstellung* in which motion is seen as happening *in front of* the stationary beholder.

Steps beyond this model can be taken with the aid of cognitive psychology, especially the study of perceiving motion. Here I want to refer briefly to the "optic sphere theory" developed by Gunnar Johansson and others.¹⁰ From the cognitive point of view, motion is perceived change in space, displacement relative to some frame of reference. The frame in which the perceiver is in a stationary state and the motion takes place against a static background is, however, only one possibility,

limited to certain cases. With the aid of the optic sphere theory we can make the following conceptual distinctions: 1. Moving *objects* can be of various kinds, the roughest division being between rigid and non-rigid objects. 2. *Motion* can mean change of place, rotation, pendulum motion, and especially with non-rigid objects, jointed motion, elastic motion (bending, stretching), fluid motion or "flow". Change of form can also be seen as a kind of motion. 3. The *direction* and *velocity* of motion can be analyzed with "visual vector analysis" or "visual psychophysics". 4. Motion is perceived in relation to a two- or three-dimensional *space*, to a static or non-static background. 5. The *perceiver* can be in a stationary state, move by her/himself ("active locomotion" requiring muscular activity) or be moved (transported by a vehicle, which is sometimes called with the oxymoron "passive locomotion"). In cognitive psychology these aspects in the perception of motion are seen as interrelated: it can be argued that the form of the object is perceived only by its motion; motion can be too slow or too fast to be recognized, and at certain velocities it becomes impossible to recognize the form and identity of the object; the appearing and disappearing can in some cases be perceived as motion (as in the "phi phenomenon" discussed in gestalt psychology).

Finally, there is the question of what or who makes the text move. Bootz (2000) has suggested that we should conceive animated text not as a document but as a *system*, which has its ontological, functional and organisational facets. Important here are the "algorithms of presentation", which affect spatio-temporal formation of the text to the view. To put it simply, textual motion can be recorded, programmed and/or it can be made dependent on the behaviour of the reader/user. Here Espen Aarseth's (1997) study on cybertext is indispensable. Aarseth typologizes the variables in what he calls the "traversal function" - "the mechanism by which scriptons" - strings of signs "as they appear to readers" - "are revealed or generated from textons" - strings of signs "as they exist in the text" - and presented to the user of the text". Aarseth proposes a typology of the variables that allow the description of any text according to its mode of traversal. Let me refer briefly only to four of the seven variables, which are of particular relevance here: 1. *Dynamics*. In a static text scriptons are constant; in a dynamic text scriptons may change while the number of textons remain fixed (intratextonic) or may vary (textonic text). 2. *Transiency*. in a transient text scriptons appear independently of the reader's/user's activity; in an intransient text they don't. 3. *Access*: in random access to the text all scriptons are readily available; in controlled access they are not. 4. *User function* can be of four different types: explorative (requires decision of what path to follow), configurative (scriptons can be chosen or created by the user), textonic (changing the text and/or traversal function is possible) and interpretative.

4. Conclusion: a sketch for a typology

To conclude this overview of possible theoretical contexts for this line of research, here is a list of variables for the analysis of textual motion in poetry and possibly in other forms of writing as well: object, mode of motion, direction, velocity, space or object-space relation and perceiver-space relation, represented time (time of representation), and the traversal function (with its own variables).

Object. In my examples, the most obvious variable is the moving textual unit: in some of the poems, the whole verse or stanza moves, in others, the letters and syllables create new combinations. In cognitive psychology, written letters and words would probably be categorized as rigid objects. However, in kinetic poetry they can also be treated as “malleable signifiers” (to use Loss Pequeno Glazier’s expression), fluid objects, that is, as non-rigid objects. When a work focuses on writing as a process in which written signs are inscribed, it challenges a simple dichotomy between rigid and non-rigid objects.

Mode of motion. “The Dreamlife of Letters” is inventive in its use of different modes of motion, change of place, rotation, pendulum motion and elastic motion (with the exception of jointed motion). Rotation is important in Knoebel’s “Wheels” too. Kac and Bootz have experimented with fluid motion and change of form. An interesting question of its own is sequential motion (for example looped motion studied by Strehovec 2003).

Direction. Most of the examples I have referred to above are constructed as a *Vorstellung*, to be watched from a stationary state in front of the screen. Thus the direction of motion in them can be described with Alberti’s vocabulary in relation to the stationary reader - the text moves from up to bottom, from left to right or vice versa, and in depth, approaching and withdrawing. This applies to “The Dreamlife of Letters” too. In “Arteroids” the word *desire* can be moved in any desired direction in two-dimensional space, but not in depth. However, this is not the case in holopoetry or in installations in which the text can literally touch the visitor. The analysis of direction becomes difficult when we are not dealing with a clearly two- or three-dimensional space.

Velocity. The velocity of motion varies in the examples used above from “Diver” to “Strings” and “Beer”, “The Dreamlife of Letters” using velocities that sometimes make the text difficult to read. The aesthetics of the impossible remains to be explored: what to say about a text that moves too fast to be intelligible?

Space. The study of perceiving motion deals usually with continuous two- or three-dimensional spaces in which the object (and/or subject) moves. The space in “Strings” is two-dimensional and virtually three-dimensional in any work that makes the letters rotate or move in depth (“Seedsigns”, even “Beer”). Yet in the context of avant-garde poetry we should not limit ourselves with these alternatives; it is easy

to imagine combinations of two- and three-dimensional spaces (not to forget their fractal in-betweens), side by side, superimposed or in some other way which does not result in the continuity of "real" or "realistic" space.¹¹ Further, a poetic work can thematize the medium in which the text moves (of which the space consists). Texts can hang in a vacuum, in immaterial, weightless space, or float in a fluid (in "Diver" something like this is suggested), touch the ground or be inscribed in solid material. The background can also be in motion (moving image behind the moving text).

The perceiver-space-relation is foregrounded in the works in which the reader/user can navigate in virtual three-dimensional space (as in "Life, A navigation", "Wheels" and in Squid Soup's work), in installations and especially in Kac's holopoetry, where the viewer's movement changes what can be seen and read, which generates new syntactical combinations. Interfaces may require muscular activity in order to make the perceiver and text move in three-dimensional space.¹² In addition, we can imagine interfaces that make us perceive motion in a non-human way.

Traversal function. When applying Aarseth's typology to textual motion it must be asked what a scripton means in this context. If scriptons are "strings of signs as they appear to readers", does this mean that every change of position of a verbal unit in relation to others produces a new scripton? If so, then textual motion that does not produce new combination of letters, words or phrases is static ("Diver"); if it does, it is dynamic ("The Dreamlife of Letters"; in "Seattle Drift" we can get a "still-life" scripton at any moment). Moving in a virtual textual space presents a conceptual problem: is "Life, A navigation" a static or dynamic text? That is, does the reader make new combinations of words by moving between them? In some of my examples new scriptons appear independently of the reader's/user's activity ("Seedsigns"); in others, reader's activation is needed ("Orbital"). It is typical of kinetic texts that the scriptons are not readily available but unfold in time. The user function in Kac's holopoems and in Small's installations can be labeled as configurative. As I said above, "Arteroids" is the only example I have found of a work in which the reader/user could change the textons to be moved, but this is probably only due to an empirical limitations in my research for this article.

Possible contexts in which to modify the model can be found rather easily in film theory and in narratology, for example. That is because here I have treated textual *time* almost as something self-evident, which can seriously limit the application of the model to such already existing and future kinetic texts yet unknown to me which do not treat time as a simple chronological succession but separate the represented time and the time of representation and create different "anachronies" between them (to say nothing of the time of reading here). This problem arises already in the case of looped textual motion: can it be seen as repetitive narration and analyzed in terms of frequency? From this point of view, some conceptual divisions in film theory and in narratology can become relevant and, at the same time, they are likely to need recasting as soon as we have a fuller view on the art of moving text.

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Notes

1. Especially in the research inspired by Aarseth's seminal study (1997)
2. In this sense my approach differs considerably from Strehovec (2003), who uses terms "digital literature" and "kinetic poetry" in a generic sense.
3. Marinetti's term for this practice was "designed analogy" (see White 1989); it could be renamed as "designed analogy of motion".
4. For recent innovations in kinetic practices, visit www.poemsthatgo.com
5. See the digitally animated version of the work in www.acg.media.mit.edu/projects/stream/animation.html
6. "In the future, when digital holograms become scriptable, it will even be possible to modify or add to the elements in the holographic text." (Kac 1996.) The idea of the reader changing the moving text is given a comic treatment in Small's eatable texts, which move and change metabolically (though everybody might not find the outcome of this rewriting process enjoyable).
7. Notable exceptions can be found in Margolin (1999), Bootz (2000), and Simanowski (2002).
8. Here I reverberate, of course, Derrida's (1972) analysis of writing as *pharmakon* in Plato's writings.
9. See the chapter "Letter Spirit" in *Fluid Concepts and Creative Analogies*.
10. See *Perceiving Events and Objects* dedicated to Johansson's work.
11. According to Brian McHale (1987), these kinds of spaces or "zones" are frequently imagined in postmodernist literature. Hofstadter's analysis of "strange loops" in *Gödel, Escher, Bach* is relevant here too. On the possibility offered by discontinuous space to holopoetry, see Kac (1996).
12. See Heidi Tikka's discussion of her interface "Osmose" (http://www.mlab.uiah.fi/culturalusability/papers/Tikka_paper.html) which makes the movement in virtual space dependent on breathing.