More than just a text: Intro

This *CyberText Yearbook Ergodic Histories* investigates literary works with ergodic qualities. Authors in this collection indicate that text-machines first appeared already during the Middle Ages, if not earlier. The unusual composition of texts, which seems extravagant even according to today’s standards, forces the reader to pay attention, to choose the beginning and the end of the text, and – most importantly – adds another level of meaning. It is an invitation to play, interact and act, which allows the text to become more than just reading matter. Its form “did not only consider a literary text a symbolic expression of a person’s subjectivity but also considered a text as determined by the level of programming and processing of signs”. (Schäfer 2006, 5).

Even though attempts to overcome the passivity of text initiated at the end of the 17th century were frequently unpopular, they are being made even today. Their youngest embodiment is e-literature. This article is intended as a synthetic description of different stages in Polish literature that led from baroque poetry to contemporary digital literature. Such a definition of the subject-matter suggests that it consists of results of searching for proto-hypertexts in Polish literature. This is indeed the case. However, the category of proto-hypertext is somewhat imprecise. One might follow Łukasz Jeżyk’s claim voiced in an essay entitled *Widmo hipertekstu. Skarga nawigującego* (*A phantom of hypertext. The navigator’s complaint*, 2006): “we might very carefully […] consider as proto-hypertexts printed literary works whose authors struggled with formal restrictions and we might assume that a hypothetical offer of multimedialization would meet their approval”. However such an attitude might force some attempts to look for harbingers of holodeck (Murray 1997), which is also noticed by Jeżyk: “mechanisms of onirique literature are easily visualised by hypertext poetic” (Jeżyk 1(3)/2006).

Thus, the presentation of works considered as proto-hypertexts should undoubtedly be made from the perspective of ergodic literature. In *Cybertext: Perspectives on Ergodic Literature*, Espen Aarseth introduces the understanding of cybertext as a higher level concept than hypertext. Cybertexts perceived as machines generating multiple statements are not limited to literary works, and definitely not to electronic texts – they embrace computer games and other forms of both ergodic and non-ergodic literature. The former requires a non-trivial effort to traverse the text. In a classical literary work (non-ergodic) such as *The Odyssey* the reader is required only to turn the pages and to interpret the text. In Aarseth’s grasp of the problem, every text is treated as a machine. A machine might work better or worse and its effectiveness is decided by a traversal function dependant on seven variables (Aarseth 1997, 62-65).
This article is just an outline, therefore I have decided to indicate only the most important characteristics of numerous ergodic texts. Generally, all the printed texts mentioned in this paper share the following variables of the traversal function:

- Dynamics: Static
- Determinability: Determinable
- Transience: Intransient
- Perspective: Impersonal
- Access: Random
- Linking: Without links
- User function: Interpretative and explorative.

There are only a few exceptions to this combination. Radoław Nowakowski’s Nieposkładana teoria sztuki (Noncompleted Theory of Art, 1994--) is an indeterminate text, and access to it is controlled. The user is also responsible for configuring the entire text (see p. 30).

In permutative works such as carmen infinitum dating back to the period of baroque (see p.7), instead of the static function defining the dynamics there appears to be an intratextonic dynamic IDT. Additionally, the text is not determinate – i.e. out of the same number of textons a different number of scriptons might be generated. In Pałuba by Karol Irzykowski there are links (see p. 22) that are not found in other works.

The ergodic character of the examples mentioned is usually determined by the explorative function of the user. Evidently, this is also a primary indicator of hypertexts. However, this does not mean that here we are dealing with hypertexts – although in both cases the literary works are ergodic.

**Image poems, poems in space: Poetry**

**Baroque text-machines**

Formal experiments in 17\(^{th}\) and 18\(^{th}\) century literature include on the one hand the employment of the tradition of word-games, such as rebuses, palindromes, anagrams etc., all of which date back to antiquity. On the other hand there are text-machines, texts which after being programmed are able to generate new texts. Piotr Rypson – in the anthology Piramidy*słońca*labirynty (Pyramids*Suns*Labyrinths) and his pioneering work Obraz słowa. Historia poezji wizualnej. (The Word’s Image: The History of Visual Poetry) – enumerates and examines unconventional literary works. Even though Rypson is an expert on atypical forms of text and book, in his works he deals with liberature (I will
dwell on that concept later in the article) rather than investigates whether a text demands (or does not demand) a non-trivial effort of the reader. This is probably the reason why examples of Polish baroque poetry were not perceived as ergodic works until today.

It is worth mentioning that if we compare examples presented in *Ergodic Histories* with those given by Rypson, we might observe a common European tradition of visual poetry. The similarity of various literary works was a result of fashion, but also of using the same Latin books on poetry and rhetoric in which creating elaborate poems was one of the practice exercises.

**Visual poetry**

Acrostics, cancrines and abecerariuses were known as early as in the Renaissance (in the works of Jan Kochanowski, Zofia Oleśnicka, Grzegorz z Sambora and others), however they did not assume the form of visual or elaborate poetry.

The author of *Piramidy*słońca*labirynty* (Pyramids*Suns*Labyrinths) maintains that the oldest visual poem discovered on Polish territory was the anonymous (probably Urlich Szober’s) epitaph to Stefan Batory, written in Toruń, 1588. It uses the form of a mesostic to create the king’s name: STEPHANUS, which is arranged into the

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*Urlich Szober (probably), 1588*

*Source: Piramidy*Słońca*Labirynty (2002)*
shape of an X (the first letter of the word Christos). A poem by Stanisław Niegoszewski (after 1584) that included a very interesting copperplate is considered to be the first Polish example of visual poetry. The poem uses acrostic forms and a palindromic distich. In the words of Piotr Rypson: “the lists of acrostics, incorporated into the main text, generated an autonomous meaning and still constituted the content of the literary work” (Rypson 2002, 16). Apart from supplying the reader with another level of meaning, such additional texts would also form various figures (for instance a cross, a circle or even a ship). Thanks to such tricks the poem accumulated even more meanings and generally widened its scope.

The first collection of visual literary works was Technopaeginum sacropoeticum (1598) by Mikołaj Lubomirski, compiled ten years after Niegoszewski’s poem. On one of the pages we discover a grid poem in the shapes of crosses. Lubomirski not only collected poems known from other collections, but also wrote such poems himself (for instance, a poem in the shape of a goblet). In his collection entitled Hymenaeus, vel carmen nuptiale (1598), one poem is especially interesting from the ergodic perspective, namely a permutable work – Optatianum – referring to the 25th song of Optatianus Porfirius. Lubomirski himself recommended reading it a thousand different ways.

Further, Wirydarz poetycki (The Poetic Viridarium) by Jakub Teodor Trębecki (1675) should be kept in mind. In the first volume of the collection there are several fascinating acrostics, echo poems and poems in the shape of a circle. In the later edition of the volume by Aleksander Brükner (1910) the poems mentioned are devoid of their visual properties.

Examples of the Polish visual and permutable poetry

For the purposes of this analysis, I selected some interesting examples of poems that work as text-machines from Rypson’s extensive study (Rypson 2002, 259-337).

The labyrinth

A poem by Andrzei Goldonowski, written in 1628 and added to the Poema historicum de S. Paulo collection, is the oldest labyrinth poem. One of the sentences: A Paulo Pluto decit victus arena might be read in every direction on the condition that we start at the centre of a square in which the text is set in a labyrinth-like manner. The movement from the centre to the border symbolises leaving the arena, in which the hermit fought Satan. (Rypson 2002, 88)
Title page of Great God’s Great Mother’s Garden (1681) and Serpentinum by Wojciech Waśniowski.

Source: Wielkopolska Biblioteka Cyfrowa

Cuirass Hardened for an Ancient Knight, 1663?

The Garden

Another literary work worth mentioning in this context is *Wielkiego Boga Wielkiej Matki ogródek* (Great God’s Great Mother’s Garden, 1681) by Wojciech Waśniowski, which inspired baroque poets in Russia and the Ukraine. Most importantly, the name of the garden is used here in the sense of heaven, *virydarius* (*heavenly court*).

A theological character of the entire poem (the superior object of attention is the Mother of God) brings us closer to God’s paradise. Yet, also the structure of the poem is to a certain extent a copy of a monastic *virydarius*. There are chapters designed as quarters for Herbs, Flowers and Trees. The abundance of techniques borrowed from visually elaborate poetry is impressive. The poetic introduction is ambiguous, and based on the title page of the reader, is forced to make non-trivial efforts as the word garden is set in a circle (or letter O). When combined, the letters printed in colour create the word Mary. All the poems in the Volume refer to the works by Hraban the Moor and Venantius Fortunatus.

The collection consists of poems in the shape of a star, a circle, an echo poem (the readers should repeat the last syllable of every verse, thus creating an echo which adds a new meaning to the entire poem), a snake poem (*serpentinum*: some verses – for instance, the first and the third one – are linked by a common verse, for instance the second one), and even a permutable *carmen quadratum*.

An Ambiguous Cuirass

In an anonymous *Kirysie hartownym starożytnego rycerza* (Cuirass Hardened for an Ancient Knight, 1663?), where visual poetry serves satirical and political purposes, the dual structure of one of the poems is particularly interesting. The set of rules for knights is completed with the images of two swords, each on every side of the text. The swords cut some of the words out. As a result we have the following versions:

| Nie będziesz miał Bogów cudzych, Hej żyj jak kto raczy. | You shall have no other gods, hey live against all the odds |
| Nie będziesz brał Imię Pańskie darmo, Bóg wybaczy, [etc.] | You shall not make wrongful use of the name of your Lord, you will be excused [etc.] |
| or | or |
| będziesz miał Bogów cudzych, Hej żyj jak kto raczy, będziesz brał Imię Pańskie darmo, Bóg wybaczy, [etc.] | You shall have other Gods, hey live against all the odds |
| You shall make wrongful use of the name of your Lord, you will be excused [etc.] |
It is a very simple trick, but in order to notice it the reader has to apply a little of Aarseth’s non-trivial effort, and thus, has the opportunity to construct two different variants of reading.

A POEM OF MIRACULOUS MEASURE

The 17th century saw the popularity of academic prints awarded to university graduates of that time. They were in the form of a kind of tribute card, praising the students’ achievements and merit. A special place in these cards was frequently reserved for elaborate poetry, especially in the form of emblems, obelisks and pyramids or objects highlighting qualities of the card’s recipient.

A volume of poems by Franiszek Domaniewski, Porta Triumphalis (1725), is particularly interesting visually and structurally. It consists of 21 poems devoted to laureates and six tribute poems to the author himself. Ignacy Kanty Herka wrote a poem in the shape of an obelisk with a star. It has a very elaborate composition: the inside angles – also constituting the beginnings and endings of verses – substitute the letters U and V, which were supposed to be there, and the corners correspond with the letter A, which additionally link opposite verses. Except for the acrostic in the obelisk, the

Kanty Herka, Porta Triumphalis (1725);
A poem applies longer poetic meter which results in the gradual lengthening of verses. Moreover, there is a didactic quality, whereby the meter used is described next to the verses. The poem is modestly called carmina mirum (Rypson 2002, 116).

**A REBUS**

Elaborate poetry frequently makes use of puzzles which the reader has to solve in order to understand the proper (or additional) meaning of a poem. Musical and graphic rebuses were the most popular. For instance: instead of the syllable cor (cordis), a poet would place a heart, as seen in one of the poems in the *Facies Franciae floribus floridi* collection (1737), edited by Marian Sikorski, or in the *Lucina ortis sub sole echico* volume (1736) by Frantiszek of Saint Casimir, a fellow brother of Sikorski. Religious works used the symbol of the cross, which substituted the Latin *crux* (Rypson 2002, 136).

**PERMUTABLE MACHINES**

The earliest and at the same time most basic examples of permutation are rhetorical figures: the chiasmus, the inversion (transgressio). However, permutation's most ancient and serious exemplification is *Carmen XXV* (4th century) by Optatianus Porfirius. All the words from the first five columns can be moved at random. Only the third word in every verse is stable. This guarantees the effect, namely that every permutation (1,62 billion of
possibilities) will produce a hexameter. In the period of baroque, this kind of permutation would be found in a proteus verse (for instance, Scaliger, Quirinus Kuhlmann).

Rypson’s research does not register many examples of Polish baroque combinatorial poetry. We will not find such elaborate machines as *Fünffacher Denckring der teutschen Sprache* (1651) by Georg Philipp Harsdörffer. However, there is a poem entitled *Carmen infinitum* (1732) included in a Jesuit volume of courses on poetry and rhetoric collected by Ksawery Prolewicz. The poem is composed as seven concentrically arranged circles, each enclosing a part of the text. The starting point is always in the centre of the circle, and the sentence placed there is: *The sadness bearer*. Thanks to its combinatorial formula, the poem resembles an incessant litany. In his commentary, the author claimed that to be able to read all the possible variants, one should live at least three thousand years – which means there are eight million poems (Rypson 2002, 131).

Another interesting example of a space-line poem which creates an image out of text, and uses permutation, is Bazyli Rudymowicz’s work (died in 1672). Latin nouns

![Image of Carmen quadratum by Władysław Simandi (1719)](source: Piramidy*Słoni*ca*Labirynty (2002))
are set in two concentrically arranged circles and complete the word *Ecce*, placed in the middle of the textual labyrinth. The image of the Host is the result. Placing words in the nominative case in one of the circles, and those in the possessive case (which are also palindromes) in the other circle, enables the poem to become a complex invocation, a litany: *Ecce panis singulorum, Ecce Victor angelorum* etc. In both cases, one might see textons placed on discs, and scriptons revealed through the work undertaken by the machine (or the algorithm of action).

In *Corvi Albi Eremitici Nova Musa Innoncinna* (1719) by Władysław Simandi, one poem (*Stichodilecticon*) appears in the form of *carmen quadratum*. There is also a circular combinatorial poem and a system based on circular forms that enable the reader to generate the poem’s meter. A poem in the shape of a board can also be found in Waśniowski’s collection (Rypson 2002, 133).

**AVANT-GARDE GAMES: THE INTER WAR PERIOD**

After the period of baroque, the first attempts to overcome the passivity of paper in Poland date from the beginning of the 20th century. After 123 years of foreign bondage, poetry was finally freed from patriotic duties. The most recognized and most accurate example is the poem *Herostrates* (1920) by Jan Lechoń, in which the author says: “And in the spring let me see spring, not Poland”. Regaining independence was connected with building a modern national unit out of a country neglected and divided due to Partitions. Such a situation facilitated the process of transplanting European avant-garde movements to the Polish environment.

Twelve years later, Marinetti’s first manifesto was announced in Poland in *Jednodńuwka futurystuw. Mańifesty futuryzmu polskiego wydańe nadzwyczajne na całą Żeczpospolitą Polską* (1921; *Futurist Leaflet: Manifestos of Polish futurism. Spesial Edision for the Hole Republik of Poland*, the name was in Poland written phonetically, disrespecting the rules of spelling), subsequent manifestos of Polish Futurism were published. They were largely influenced by Italian and Russian Futurism, but also by Formism, an artistic movement originated in Poland. Authors whose poems and performances were published in the *Leaflet were*: Bruno Jasieński, Stanisław Młodożeniec, Tytus Czyżewski (from Cracow) and Anatol Stern, as well as Aleksander Wat (from Warsaw).

The Futurist’s program proclaimed the necessity to break away from tradition: “The civilisation and culture are sicknesses, they should be considered as garbage, we choose simplicity, coarseness, cheerfulness...” (Stern & Wat 1920). “It worshipped the machine” (Jasieński 1921); “We love electric machines and would never hurt them” (Czyżewski 1921).
Electric visions by Tytus Czyżewski: Futurism

In his poems and paintings, Tytus Czyżewski observed all the Futurist guidelines. His collection of poems, Zielone oko. Poezje formistyczne. Elektryczne wizje (Green Eye. Formist Poetry. Electric Visions), published in 1920, disregards formal and traditional page composition, which is evident from the very title page, and implements the idea of words in liberty proclaimed in Marinetti’s second manifesto. In the middle section of the title (Formist Poetry) the letters slant, which together with an electric title, application of different typefaces and bold font, was supposed to produce a more mechanical poem. However, despite introducing experimental solutions, at that time only some of Czyżewski’s works were produced with ergodic characteristics. These are the poems he not only wrote, but also designed graphically.

W najzawilszej materii
W ciemnych zwojach ślimaka
Wszystko można zrozumieć
I wszystko skojarzyć

Jak deszcze, które płyną
Jak śmierć nie ginie i trwa
Myśli mkną i giną
I puste słowa słyną
Jak deszcze, które płyną
Jak śmierć nie ginie i trwa
Ślimak który usiadł
na źdźble nikłej trawy […]

Tytus Czyżewski’s Knowing (1920)

One such piece is Poznanie (Knowing), from the previously mentioned collection. In the poem one of the stanzas is entirely rotated 90 degrees to the right. It may be read from either the left or right. The extreme verse on the right-hand side is: Jak deszcze, które płyną (Like rains that flow), which might explain the rotation of the fragment, as its composition actually imitates streams of rain. However, it is difficult to say which is the correct reading direction: from left to right or from right to left, or should one alternate
between the two? All are possible but reading from left to right is the most logical choice.

Another interesting example is a more graphic poem Machaniczny ogród (Mechanical Garden, 1921), published in the periodical Formiści. Words are inscribed into squares, which — as one might assume from the titles: White Rose, Primula the Flower, Matthiola etc. — are to symbolize flowers and a butterfly (The Swallowtail). However, in this instance the squares have no stems. The possible order of reading might be dictated by a vertical composition of flowers, but it does not lead to any sensible meaning. The content is in two parallel stanzas, in which the words are spaced out. The entire work is arranged in such a way as to imitate flowers, stems or something else. The reader can also read the text in many ways: verse after verse, from top to bottom, following various branches. The two stanzas are combined with a conjunction and placed between them.

Another collection, Noc-dzień (Night-day, 1922), introduces a more evident possibility of parallel readings. The poem Płomień i studnia (Fire and a Well) is composed as if it were a very short drama act, with characters, stage directions and even something which might be treated as a primitive storyboard (window open, window closed). The poem should be read as one entity — it starts in the left column and continues to the right, but the arrangement suggests that we can see two parallel histories. A similar trick is used in Hymn do maszyny mego ciała (A Hymn to the Machine of My Body).
Mechanical Garden, (1921) by Tytus Czyżewski
Source: Noc-dzien. Mechaniczny instynkt elektryczny (1922)

Fire and a Well (left) and A Hymn to the Machine of My Body (1922) by Tytus Czyżewski
Source: Noc-dzien. Mechaniczny instynkt elektryczny (1922)
Visual elements additionally appear in other literary works by Czyżewski: in the 1922 Wąż (The Snake), Orfeusz i Euridika (Orpheus and Euridice) and Hamlet w piwnicy (Hamlet in the Basement), however they usually function as an addition, a trifle, and do not encourage the reader to make any explorative decisions.

A VISUAL MARRIAGE: JULIAN PRZYBOŚ

After Futurism there was another Polish avant-garde movement, Awangarda Krakowska, active from 1922 to 1927, which brought together artists publishing in the periodical Zwrotnica (The Switch). Tadeusz Peiper was the founder and the most important theoretician of the group. There is no space in this article to discuss Peiper’s programme. It might be described with the use of expressions such as: “3M” meaning an interest in the municipal, the mass and the machine; “poetry does not give names, it gives nicknames” – in the sense that it uses equivalents to express feelings; and the most important notion in poetry is a “blooming composition, which means that the composition consists of subsequent overlapping and convincing units of meaning which start from the
Przyboś is a master of employing the guidelines of Awangarda Krakowska. Out of those requirements he created a theory of poetry as a new language system. The new poetry was supposed to damage “tworzydła”, in other words, fixed patterns, linguistic stereotypes, or – in short – the language of traditional literature. This process of “damaging” was supposed to rest in using the minimal number of words in order to achieve the maximum strength of the content. This aim was to be reached thanks to “międzysłowie” expressed with disproportionately piled-up metaphors.

After the period of Awangarda Krakowska in 1929, Przyboś joined the artistic group a.r. (revolutionary artists or real avant-garde), which gathered artists that admitted to some degree of “constructivist orientation” (Gazda 2000, 27). There were both visual artists (W. Strzemiński, K. Kobro, H. Stażewski) and poets (J. Brzękowski, J. Przyboś). In 1930, the first publication of Biblieta a.r. (a.r. Library) appeared. This was Z ponad (From Above) by Przyboś, in which a single-page Komunikat Grupy a.r. nr 1 (Announcement of a.r. Group no. 1) was added. These are the only elements in the poet’s output that we might treat as ergodic.

Announcement of a.r. Group no. 1 (1930); Source: Z ponad (1930)
The graphic concept of the collection was prepared by Władysław Strzemiński together with Katarzyna Kobro (two poems), according to his idea of functionalism in the applied arts. Fonts prepared by Strzemiński were used on the title page, each page’s layout was organized in agreement with his theory of visual composition, and the same applied to the construction of a grid on every page.

Each of the 24 verses published in the collection employs similar visual means: fonts of different size and measure, large horizontal and vertical lines filling the space and placed on the grid structure. However, only in some poems the system proposed by Strzemiński encourages the reader to engage in non-trivial reading behavior. The most trivial trick is to force the reader to turn the page, like in the poem Ziemniaki (Potatoes), which is rotated 90 degrees clockwise. A similar trick, for one of the verses, is used in several other poems Deszcz (The Rain), Noc (The Night), and Gwiazdy (The Stars). Except for The Stars, the reader is not required to make a decision as to where to start reading and how to continue.

There are two very interesting works in the From Above collection, even though they apply very similar solutions, namely: the poem W budowie (In Construction) and a single-page leaflet added to the book. In the poem, there are plenty of words rotated 90 degrees clockwise. This is supposed to imitate the process of creating, resembling the scaffolding of a construction site. The structure is so complex that the title almost disappears. This is due to the fact that it can be connected with several verses placed next to it. The manifesto has an even more explorative character. In order to read its guidelines, we have to turn it around many times.

In Announcement of a.r. Group one may find the following words: “a.r. links visual art with poetry. It poses the problems of new art in its entirety, instead of (which has been the case so far) innovation in one art form combined with compromise and ignorance in another”. Yet, as early as 1933 Przyboś described his collaboration with designers in the following way: “weird, destructive typographical composition attracts the reader’s attention instead of focusing it on poetry, it causes frustration and irritation” (Satalecka 2004). This may lead one to question as to whether or not the ergodic character of a mutual creative effort of a writer and a designer is planned and accepted by the author, or whether it is produced through the designer’s or programmer’s interpretation, as seen in, for example, Hocus Pocus by Aneta Kamińska (see p. 32).
Spreading the words: Concrete poetry and language poetry from the 1950s until today

Literary works that might be interesting from the ergodic perspective return in the 1960s. For inspiration, artists turn to the ideas of the prewar avant-garde. Modified and verified claims of the earlier avant-garde can be traced especially in the cases of concrete and language poetry. Concrete poets followed in the steps of the Futurists, Dadaists and – primarily – Lettrists. Language poets (in Polish literally: linguistic), who demystified possibilities of language as a system, were deeply influenced by the use of metaphors in Awangarda Krakowska, and especially by its pope, Peiper, and its master, Przyboś. Polish language poets, in addition to those who continued their work – the poets of the Nowa Fala (New Wave, 1968-1976) generation – experimented with words also because the official language in communist Poland suffered from censorship, and therefore, these poetic efforts offered them the opportunity to reveal mechanisms used by the propaganda to take over the language. Today, language poetry is alive in neolinguists’ poetry (Jaroslaw Lipszyc, Maria Cyranowicz, Joanna Mueller). Lipszyc’s collection Mnemotechniki (Mnemonics, 2008), published in Wikisource, is especially interesting. The form of the poems’ publication is not accidental: Lipszyc is a postproducer

Between (1977) by Stanisław Dróżdż; Source: Kulturaonline.pl
who remixes entries from Polish Wikipedia, he even supplies the readers with links to the particular entries. He creates a new poem combining fragments of Wikipedia definitions.

**Pojęciokształty**

The beginning of concrete poetry worldwide dates back to the 1950s. In Poland, the first attempts at concrete poetry appeared at the end of the 1960s. One of the most significant concrete poets was Stanisław Dróżdż (along with M. Grześczak, M. Bocian, L. Szaruga, W. Sztukowski); from 1967 he was also a pioneer of the entire poetic movement.

Dróżdż defined his work as “pojęciokształty”. These are, in his words, “substantial and formal, self-analyzing reality codifiers integrating science and art, poetry and fine arts”. Undoubtedly, his works are extremely minimalist, black and white, they complete the space between signs, where “form is determined by the content, and the content by the form. Traditional poetry describes objects. Concrete poetry communicates in images”. (Gorządek 2004)
The most recognized work by Dróżdż, or possibly even his masterpiece, is *Między* (*Between, 1977*). In a white cuboid room, all the walls, the floor and the ceiling are covered with letters constituting the word ‘between’, yet they are not arranged properly. We are inside a database of textons, precisely *between* them. In some realizations of the installation one might actually walk in *between* them. The title and the form equip the reader with an algorithm of interpretations.

A similar mechanism is applied in *Klepsydra* (*Sand Glass, 1967*), which refers in its form to wing-shaped poems by Simias of Rhodes (300 BC), or to *Naehern*, a poem by Gerhard Röhm of the Wiener Gruppe – a poetic movement much closer to concrete poets. The words *will be/were* are separated with *is* which cannot be read without turning the sandglass upside down.

*Mniej więcej* (*More or Less, 1977*) by Wojciech Sztukowski is another work worth mentioning. In some sense, it is similar to *Between*. Using the contrast between the fonts, it creates an optical illusion of a three-dimensional hexagonal form out of the letters o, k and ł.

The set of textons arranged clockwise gives the word ‘około’ (around, more or less) or ‘koło’ or ‘oko’ (circle, eye). The artist plays with the reader in many ways. The title ‘more or less’ is an indication. It has the same meaning as “około” (around). If the reader manages to discover a connection between the word “oko” (eye) and the phrase “na oko” (more or less), he/she realizes that with a modest repertory of means Sztukowski produces a rich text-machine. The meaning of the text is enveloped in the hexagonal space, the scripton is written around (“na oko” means “around”; also a reference to the phrase “na oko”) the virtual hexagon.
The literary works mentioned are self-explanatory. Concrete poetry uses textons on the level of atoms. Here, textons are frequently single letters or even missing letters\textsuperscript{11}, and the scriptoms usually refer to the minimal meaningful unit: a word or a concept. Grasping it is definitely a non-trivial effort. In this case, the ergodic character is not solely a matter of stimulating a semiotic sequence by the reader, but also of discovering a single meaning, and more precisely, its non-descriptive, practical definition.

The title of each work is like an encyclopedic entry, which is defined by its form. Those two elements constitute a built-in quasi manual, which subtly suggests a manner to interpret and to explore this non-encyclopedic, but practical definition. What does it mean to be “between”, what does it mean to be “around” – the answers are shown in the texts.

\textbf{In the space of calques, copies and angles}

Tymoteusz Karpowicz is called the last great Polish modernist, and he is notably the most important representative of linguistic poetry. In Poland, this is also represented by M. Białoszewski, Z. Bieńkowski, E. Balcerzan and W. Wirpsza, and later applied by poets connected with the \textit{New Wave}\textsuperscript{12}.

Karpowicz published his first poem in 1948 and from the very start, with every collection of poetry he proved that he was a poetic experimenter. In his poems the influence of the Polish pre-war avant-garde movements is evident. Karpowicz was especially devoted to Awangarda Krakowska. Linguistic experiments of Karpowicz are, according to Zbigniew Jarosiński: “attempts to create poetry that would provoke deepest semantic possibilities of language, that would be a self-creation of meanings independent from the common logic” (Jarosiński 1996).

Beginning with \textit{Odwrócone światło} (\textit{Back-to-Front Light}, 1972), his collections are interesting also from the ergodic perspective. Jacek Trznadel claims that because of his avant-garde intuitions, Karpowicz tried to create a stable world out of yet unformed devices; he tried to excel Przyboś (Trznadel 2006, 134). But, what does this actually mean?

\textit{Back-to-Front Light} is a 424-pages long collection of poems which constitute one entity and reflect the formal structure of the New Testament. Each spread is organized in a similar manner. Poetry is on the right side: a single-verse laconic \textit{original} or one to six \textit{logical calques}. The left column is devoted to the artistic copy, which is sometimes extended with a postscript.

\textit{Rozwiązywanie przestrzeni. Poemat polifoniczny} (\textit{Dissolving Space – A Polyphonic Poem}) was published only seventeen years later. The structure of the text is quite similar, but the author is even more experimental.
The equivalent of the original is an *alpha* poem (on the left), which is linked to six texts being its trigonometric functions: *sine alpha*, *cosine alpha*, *tangent alpha*, *contangent alpha*, *secant alpha* and *consecant alpha* (on the right). The poem *Secret Dimension* is placed on both sides of such a spread. Different functions of the alpha angle are signed with names or posts of their authors, for instance, Wittgenstein II, Stalin II, Yoric II, Catherine the Great II, the Head of the National Farming, Echo etc.

Karpowicz’s most complicated collection of poetry is *Słoje zadrzewne (Three Rings, 1999)*, a considerably large volume published in the author’s lifetime. It is subtitled *Selected poems*, but the selection is done in a highly unusual way. Retaining the biblical structure (only in parts II-X) Karpowicz remixes poems from his previ-
ous collections. Their arrangement is similar to that already applied in *Back-to-Front Light*. For instance, the poem *Kamienna muzyka* (*Stone Music*), from the collection of the same title (1958), is placed like an artistic calque on the left side. The right side starts with the equivalent of a single-verse original which assumes here the form of the title of the poem – *Stone Music*. Below there are not calques but parallaxes, which should be understood as distortions of the originals. In this case, the parallaxes are two poems from the *Dissolving Space* collection, but it is not specified as to whether these are alpha angles or poems defined as secret dimension.

Jan Potkański compares the structure of *Back-to-Front Light* to a medieval motet – one of the oldest forms of musical polyphony. The most popular motets (12th to 14th century) used three voices, and each of them used a different text (Potkański 2006, 164). However, it is difficult to imagine simultaneously reading texts from the spreads of Karpowicz’s collections mentioned in this article. The composition resembles pages from medieval codices, in which the main text is accompanied by voices placed next to the text. The reader has to make a choice regarding the text spread on two pages, as to where he/she is going to start reading. The exploration of the text is not straightforward. The *original* is placed on the right, which may be the first obstacle when reading from left to right. In *Three Rings* there is also a continuity of parallaxes, which might in theory be read as a sequence or a hypertext web of references to prior literary works. Just like in concrete poetry, the understanding of a textual machine’s actions depends on the manual inscribed in the titles. One could say that the *original* refers (links) the reader to copies and calques which constitute its variations. In a similar manner, alpha poems and their functions (in other words transformations) should be interpreted with a commentary: a *secret dimension* added, such as a note in the margin.

**Following weird books: Fiction**

Most theoreticians analyzing hypertext, or more widely and precisely E-literature, identify the same set of literary works as seen in past heritage and literature of that kind. In the fictional canon of these texts, there are always Laurence Sterne’s *Tristram Shandy* (1759), James Joyce’s *Finnegan’s Wake* (1939), Vladimir Nabokov’s *Pale Fire* (1962), Marc Saporta’s *Composition No. 1* (1962), Julio Cortázar’s *Rayuela* (*Hopscotch*, 1963), B.S. Johnson’s *The Unfortunates* (1969), Italo Calvino’s *Il castello dei destini incrociati* (*The Castle of Crossed Destinies*, 1973), Georges Perec’s *La vie mode d’emploi* (*Life A User’s Manual*, 1978), Milorad Pavić’s *Hazarski rečnik* (*The Dictionary of the Khazars*, 1984) etc.
Interestingly, the canon is the same whether cited by Polish or foreign scholars. This seems obvious, which is exactly the reason why we have the canon. But does it mean that Polish literary achievements lack this kind of heritage, or, more interestingly, lack fiction with basic ergodic properties? To prove that this is not the case, I discuss here some notable Polish ergodic works.

**Forest of things: Silva rerum Sylwa**

*Sylwa* is a Polish name for special books called *silva rerum* (other names are Nihil et omnia, Varia, Miscellanea, Vorago rerum, Farrago or *Torba dworska* ‘court bag’). They were extremely popular, especially among noble families and country-houses from the 16th to the 18th century, both in the Republic of Poland and throughout Europe. They were handwritten family diaries in which, according to Zygmunt Gloger, one could find “entries on current events, political speeches, wedding and funeral speeches, diplomatic notes, letters, declarations, political satire and libel, diary-entries of war marches, statistical information, dates of historical and family events, funds, financial documents, poems, songs, weather phenomena, disasters, headstone engravings etc” (Gloger 1896, 407).

Silvae were completed throughout generations, and thus, could assume quite enormous proportions. The most common size is from 500 to 800 pages, although there were some exceptional examples, such as *Silva rerum curiositatum* (latter half of the 17th century) mentioned by Gloger which had 1754 pages. Most home chronicles were printed, such as, for instance, *Silva rerum kaszelana smoleńskiego* (Silva

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*Ambroży Grabowski’s Silva-rerum or Anything about Anything* (1864).

Source: Małopolska Biblioteka Cyfrowa
Rerum by the Lord of Smoleńsk, 1743) by Kazimierz Niesiołowski, or Pamiętnik sandomierski (Diary from Sandomierz, 1829). Unfortunately, major collections of silva rerum perished during World War II (Niedźwiedź 2001).

The structure of silvae is interesting from the ergodic perspective. Firstly, the notes were usually made by several members of the family, and it frequently happened that someone would add their own text to already existing notes – similar to the voices in the margins. Secondly, numerous printed texts, photographs, invitations, obituaries etc. were added next to the handwritten text, as in for instance, Ambroży Grabowski’s Silva-rerum, czyli cokolwiek o czemkolwiek (Silva-rerum or Anything about Anything, 1864). In this way a unique, unconventional publication was produced. The fact that it embraced characteristics of contemporary Internet-based projects such as collaborative writing, equips silva rerum with textonic dynamics – during every act of reading the user has the possibility to enlarge the number of textons.

The unrealised project: Rękopis znaleziony Saragossie

Rękopis znaleziony Saragossie (The Manuscript Found in Saragossa, 1810) by Jan Potocki is the first novel written by a Polish author that encourages the reader to play with the text. The construction of the novel is linear. Thus, there is no place for variations. However, within the 66 chapters, each describing one day, there are 36 stories corresponding with each other on the level of the plot. Even though the reader is led straight ahead, the additional threads find their way into the main storyline of the text and interrupt it, only to be interrupted by another thread, and later return. The form of a story within a story makes the reading difficult, as it encourages the reader to skip some of the threads in order to follow the one which was started earlier. The author was well aware of the reading difficulties posed by The Manuscript. He demonstrates his awareness through the words of his characters and also suggests how to deal with those problems – the project he proposes is very similar to a contemporary hypertext:

As soon as he left, Velasquez spoke and said, ‘I have tried in vain to concentrate all my attention on the gypsy chief’s words but I am unable to discover any coherence whatsoever in them. I do not know who is speaking and who is listening. Sometimes the Marques de Val Florida is telling the story of his life to his daughter, sometimes it is she who is relating it to the gypsy chief, who in turn is repeating it to us. It is a veritable labyrinth. I had always thought that novels and other works of that kind should be written in several columns like chronological tables.’
‘You are right,’ said Rebecca ‘One would find in one column, for example, the story of the Marquesa de Val Florida being unfaithful to her husband, in the other the effects this event had on him. That would no doubt clarify the story.’

‘That’s not what I mean,’ replied Velasquez. ‘Take the example of the Duke of Sidonia, whose character I am about to find out about although I have already seen him laid out dead on his bier. Wouldn’t it be better to start with the war in Portugal? I could then find in the second column Dr Sangre Moreno thinking about the medical arts, and so would not be surprised by his odd behaviour.’

‘Yes, indeed,’ interrupted Rebecca. ‘Continual surprises don’t keep one’s interest in the story alive. One can never foresee what will happen subsequently.’ (Potocki, 316)

While reading Potocki’s novel, the reader has to make an effort to untangle the complex set of parallel stories and out of them create a single coherent story. However, it cannot be claimed that the effort is non-trivial and that the reader is required to act in any other way than to interpret. If the project quoted was realized, we would undoubtedly be dealing with an example of ergodic literature.

**Visible and Invisible Books: ** **Pałuba**

Another instance of an unconventional text is *Pałuba* (The Hag) by Karol Irzykowski, published in the modernist period in Polish arts (1903). However, as indicated by Kazimierz Wyka in an introduction to the second edition of the book (1948), the novel diverges markedly from the literary fashion of that time, it is even called *post-modernist* (Wyka 1949, XI). The novel was ahead of its time. Theoreticians treat it frequently as a presentation of ideas similar to Sigmund Freud’s psychoanalysis or Alfred Adler’s individual psychology, which is even more interesting if we know that the author had not encountered any of them.

From the ergodic perspective, it is the construction of the text that matters. *The Hag* is a collection of several books. Five of them are overt and constitute parts of the novel: *Dreams of Maria Dunin*, *The palimpsest, The Hag. A Biographical Study, Notes on The Hag, Explanation of ‘Dreams of Maria Dunin’* and *The Rampart of ‘The Hag. A Biographical Study*, embraces some non-overt books. Wyka distinguishes the following elements: the novel itself (the study), the quasi novel about writing a novel and the analytical commentary from the author (Wyka 1949, XXXII).

It is possible to read the novel from the beginning to the end without the commentaries which, due to their extensive size, had to be placed outside the main text, not to interrupt the flow of reading. They are however, an essential part of the novel. It is a pity that there are no links in the text to respective commentaries, which makes
the navigation difficult. In the already mentioned introduction to the second edition of the novel, Wyka suggests that the footnotes should be modified and the places in which the reader is required to break away should be indicated in the main text. Interestingly, one commentary might refer to several different parts of the main text. In *A Biographical Study* there are physical indicators (see Figure on p. XX; translation below) leading to verses on different pages of the novel, and thus, encouraging the reader to explore the text and decide the order of reading. We might observe it in the following sentence: “he thought the reason was femininity (das Ewig-Weibliche), but doing so he was spoiling his plan of understanding the past (indicated for instance on p.87 v.36 and next)” (Irzykowski 1949, 170).

**Two Rhizomatic Sentences: Bramy raju**

*Bramy raju* (*Gates to Paradise*, 1960) by Jerzy Andrzejewski, seems to be devoid of any structural ergodic properties. However, this novel about the 13th century children’s crusade to the Holy Sepulchre should be mentioned when investigating text-machines. The entire novel consists of two sentences. The first, spanning 25 165 words (in Polish), is a sequence of entangled and intertwined confessions of the young crusaders. In the second there are only four words: *They walked all night*. Thanks to the novel’s unconventional structure and the constant movement of the crusade, the children and their words, *Gates to Paradise* was mentioned by Gilles Deleuze and Félix Guattari in their famous introduction to *Le millieu plateux* (*A Thousand Plateaus*) as the most beautiful example of a perfect rhizome-text. It was described as a nomadic text along with *La croisade des enfants* (*The Children’s Crusade*) by Marcel Schwob, and *La
dislocation (The Dislocation) by Armand Farrachi, which deals with the fourth crusade. 
(Deleuze & Gauttari 1988, 236-237)

The rhizome has no beginning and no end. It is always in-between things. It is a semi-being – in Andrzejewski’s sentence/story one fragment is repeated nine times: “...objawił mi Bóg wszechmogący, aby wobec bezdusznej ślepoty królów, książąt i rycerzy dzieci chrześcijańskie okazały laskę i milosierdzie dla miasta Jerozolimy... (...the mighty God spoke to me to make sure that in the age of vicious blindness of kings, princes and knights Christian children will show mercy and kindness towards the city of Jerusalem...)”.

This recurring and never altered phrase is something which could be turned into a link, should a hypertext adaptation of Gates to Paradise be desired. But it is not clear as to whether this would match Adrzejewski’s intentions. There is no center here, one might start reading at any of these points, end there or begin anew.

Before Blog and Wiki: Miazga

In 1960, the year that Bramy raju (Gates to Paradise) was published, Andrzejewski began contemplating the creation of a monographic biography of a fictional artist, a contemporary Polish writer (Synoradzka-Demadre, XXXII). Doctor Faustus by Thomas Mann was a direct inspiration, which he had just finished reading. Two years later, Andrzej Wajda, a director, asked the author of Popiół i diament (Ashes and Diamonds) to write a film script to a contemporary version of Stanisław Wyspiański’s drama Wesele (The Wedding, 1910)22. However, the writer and the director had different ideas. In the end, Andrzejewski incorporated his idea into the novel Miazga (The Pulp). This novel was described by one critic (Błoński 1993) as a “complex and perverse fiction machine”. Is it indeed a machine? Let us see.

In 196623 the first excerpt of The Pulp, along with the presentation of the further development of the plot, was published in the literary magazine Twórczość. Andrzejewski intended both to describe Poland of that time and refer to tradition (The Wedding), but also to add two alternative plot versions. The idea of creating chapters which demonstrated “how it could have been and how it really was” and the simultaneous presentation of fictitious facts, the collage of weather reports, excerpts from newspapers, travel guides etc. reveal the ergodic character of the novel.

The final version of the text was published in 1970 and differs considerably from The Pulp dated 1966. The time of action and the characters’ fate alter – they had seen March 1968 and were well-aware of the events of the Prague spring. The change affects the construction of the novel. A new text is born on the basis of the old one. It becomes a palimpsest24.
The three parts of the initial text are absorbed by a new textual being – an author's diary – and divided with a chapter formed as an index, a lexicon of characters involved in the novel's action. Some of the entries resemble a who's who format or encyclopaedic entries. Some of them are even longer and resemble short stories.

The author assumed that the reader would leap from the diary or the main text into the name index in order to understand who is who in the novel. He does not, however, add any physical links. There are also no indicators in the index itself, in places where facts presented in one entry might lead to other entries. The reader is thus encouraged to explore, yet is not overtly aided in doing so. For that reason, the presence of the explorative function of the user is in this case dubious.

The Pulp of 1970 consists of a diary, a lexicon and the main part of the text with two plot versions. In the 21st century, it might probably take the form of an author's diary, a web blog, completed with a certain kind of lexicon of people based on the wiki mechanism, and in this form it may be assumed that it requires a non-trivial effort. But, once again that would not have been Adrzejewski's intention.

A TAPESTRY TEXT: ARW

Poems of Stanisław Czycz are considered examples of tapestry poetry (Marx 1980, 16), woven with words or – it is perhaps more accurate to say – voices. The same claim applies to the author's fictional works, the most famous of which is Arw. This short novel, being only 44 pages in length, was started – just like The Pulp – as a screenplay contracted by Andrzej Wajda, in 1975. It is possible that the intention to write "for the screen" might influence the construction of the text.

The first part of the novel is a polyphonic poem introduced with a manual, designed to facilitate the process of reading. It takes the form of two parallel columns of text with a variable width, which in the recent edition (2007) were additionally highlighted with color and special marks in the text. The columns differentiate between the voices of the tapestry poem woven in this non-trivial manner, as well as introduce different time perspectives within a single voice (for instance, statements from the Stalinist era and those referring to the time of the prose poem's action). Fragments of musical notation of Cantata on Stalin and indicators to titles of Andrzej Wróblewski's paintings also appear in the text. Arw is actually a prose poem about the artist, as indicated in the title – an anagram of his surname's first letters.

The reader is obliged to decide about the order in which he is going to read particular narrative sequences. They are all parallel stories referring to the gallery space where the action takes place. The same points (subjects) appear in all the sequences and bind them together.
Arw — tapestry text by Stanisław Czycz (1980)
Source: ARW (2008)
In the subsequent part of the text that is mostly fictional, the form is less complex. The only structural device used by the author is the division of the text into two parallel columns, each presenting one character’s fate. Again, is has to be decided as to which path should be followed first. The reader explores the text, but the text’s structure does not supply him with various versions. This is mostly because the alternative meaning is not hidden, instead it is extremely difficult to ignore. The entire concept however, is an interesting ergodic machine.

**LIBERATURE INSTEAD OF ERGODIC LITERATURE**

In 1999, Zenon Fajfer suggested in the Polish literary magazine *Dekada literacka* that an annex should be added to a dictionary of literary terms. In the existing literary discourse the main categories are fiction, poetry and drama. Fajfer claims that it is necessary now to include liberature.

The need to create yet another literary category results from the observation that more and more unconventional literary works are appearing world over. These are literary works that reject the fixed set of rules accepting only linear forms of text construction. Fajfer gives examples of works such as *Tristram Shandy, Un coup de dés jamais n’abolira le hazard* (A Roll of the Dice Will Never Abolish Chance), *Cent mille milliards de poems* (Hundred Thousand Billion Poems) and the novels by Mark Danielewski. It can be stated that liberature is interested in similar objects as those coming under ergodic scrutiny. However, Fajfer’s suggestion is only partly parallel to Aarseth’s project.

Liberature is absolute literature, where the text and the space of a book are inseparable. Where the book no longer consists of a literary work, but itself is an artistic project (Fajfer 1999/2005). In texts treated as liberature, the architecture and the visual level of the text is as important as the plot or the style.

The term liberature is a combination of the Latin liber (a book) with the word literature, and points directly to what is equally important as the text itself. Radek Nowakowski, the author of liberature, demonstrates it in an even more straightforward manner in *Traktat kartograficzny, czyli rzecz o liberaturze* (Treatise on Pageograph or a Question of Liberature, 2002): wyraz/obraz/na raz (scripture/spectre/specture). The English term “specture” was coined by Nowakowski (Nowakowski 2002-2008). However, the physical side of the book is not only linked here to particular realizations of artistic projects. Artist’s books cannot always can be treated
as liberature. Additionally, the visual side is not a constitutive element of liberature, and a liberary work might do well without it.

Many examples of liberature can be classified as ergodic literary works and many examples of ergodic literature can be classified as liberature. However, it is not always the case. Liberature is ergodic much more frequently than vice versa. For instance, Cortazar’s *Hopscotch* is not ergodic liberature because the physical side of the book is not that important.

Fajfer finds hyperfiction problematic because it is not strictly liberary: the hypertext is “practically devoid of space qualities and dematerialized” (Fajfer 2003, -4) and there is no notion of the physical status of the book. On the other hand, Nowakowski applies hypertext when he thinks he is unable to realize some projects on paper or when the realization, even if possible, would be limited to a single complicated literary work. Therefore, the author of the term *liberature* admits that there might be a need to create a sub-category or a separate case for e-liberature. The name e-liberature was first proposed by Mariusz Pisarski.
Liberature in Use

In Poland, liberature is actively created by the author of the entire concept, together with Katarzyna Bazarnik and Radek Nowakowski, who have already written more than twenty library works.

*Oka-leczenie* (2000) was created by the literary duo of Fajfer and Bazarnik. This is a book (three books) with three backs. The very first decision the reader has to make relates to the questions of: Where do I start? And, how should it be read? These are non-trivial. Inside the books, apart from the typography experiments, page composition and other similar tricks, there is also a text. One discovers that in *Oka-leczenie* there are not only visible texts, but also invisible ones, which even constitute the majority of the text. Fajfer has a name for this method of hiding words in the area of printed text; he calls it *emanationism* (Fajfer 2006). It is a kind of multi-level acrostic (story within story). We read not only the initial letters in every verse, but the initial letters of every highlighted word until the *embryo word* is reached. From the subsequent layers, a new text is gradually constructed. Every such effort will produce new scriptons, which will soon enough become textons for the new course of the *programme*. In this case, it seems we can even speak about a cybertext machine. However, there is one small problem: only two minor typographical signs suggest how this machine works.

A digital version of Zenon Fajfer’s *Ars Poetica* (2003), registered by the Internet portal Techsty.art.pl is an example of e-literary emanationism in use. This Flash poem, which assumes the form of an animation, would not be ergodic. There however, one small trick that changes the situation. Thanks to placing a push-button *back* at the end of the text, this double-exit literary work encourages the reader to explore. Thus, the reader might see (read) the animated presentation until the end and the multi-layered acrostic becomes a semi-palindrome.

Books by Radek Nowakowski are entirely different, but they also require a non-trivial effort from the reader. The most spectacular of his works is *Ulica Sienkiewicza w Kielcach* (*Sienkiewicz Street in Kielce*, 2002). Compared with his other publications, the novel’s print-run was quite impressive, it reached five hundred copies. The ergodic character of the book lies in the fact that the reader is required to actually and physically reconstruct a street of ten and a half meters which represents the actually existing Sienkiewicz Street as it was in 2002. On both sides of the street fronts of houses are visible, co-existing with the display of text written in many different languages. It assumes different shapes: for instance it can be sloppy when the character is in a hurry, or careful when he moves slowly. It might look like a tree, when the character is sitting under a tree. The street is a parallel map; the text, a
record of the character’s movement. Interestingly, he is a polyglot, thinks and speaks in several languages and if the reader cannot speak all of them, he will not be able to comprehend the whole text. In books where Nowakowski supplies three language versions (Polish, English, Esperanto) there are also some deviations in meaning of text. In one language, he speaks about chopping wood, in another he talks about cutting branches. May it be said, that a non-trivial effort in this case would be the act of searching for everything in a dictionary, and in so, deciphering the entire text? No, however this experiment is an interesting form of following different versions of a text.

Nieopisanie świata część trzecia (A Non-Description of the World – Part Three, 1990-2000) is an unusual literary work published in two editions. The first one is a leporello, which is supposed to constitute a literary tomography of an invisible cuboid left in the Świętokrzyskie Mountains. Three hundred and sixty-five concertinaed pages constitute subsequent scans of the tomograph. The pages can be turned either left or right. Depending on the direction chosen, we journey in time (the night segment is black and white) or in space (the day segment is colorful), and the reading never ends, as the ending is at the same time the beginning of another course of reading. In the second edition, where the pages have been sewn, there are two codexes (night and day codex) glued at the back. We receive an hour glass book, without a start and without any
ending. A cover placed in the middle has a window cut into it which serves as a passage from the day into the night, from the microcosm to the macrocosm, and in the opposite direction. The book is certainly an ergodic work: there are two separate stories, and the composition of pages frequently demands an unusual reading behavior. Moreover, the book is looped.

Nowakowski is also the author of several ergodic texts that pose some theoretical problems. In *Nieposkładana teoria sztuki* (*Noncompleted Theory of Art, 1994--*), a pile of separate pages is to be put into a box. Nowakowski claims it is "a theory puzzle. With the exception that not all of the elements fit" (Nowakowski 2008). This seems quite similar to Marc Sapry's idea realized in *Composition No. 1*. However, in this example each box consists of a different number of pages. Further, according to the author, the book is ever-growing. With each new edition there are more pages and textons than before.

*Nowakowski's A Non-Description of the World – Part Three (1990-2000)*

Source: Courtesy of R. Nowakowski
Cybertext Yearbook 2010

The movement from hypertextuality to physical reality in Libro 2N (2005). Below a very strange documentation of this project.

Source: Courtesy of R. Nowakowski

Tajna kronika Sabiny. Piąta jesień. (Sabina’s Secret Chronicle. The Fifth autumn, 2001) causes quite different problems. How can such a non-trivial effort be dealt with in relation to the completely trivial process of turning the pages? In Nowakowski’s work, the trivial act might end up damaging the book. In Sabina’s Secret Chronicle, pages are connected in a labyrinth-like manner, we access each book from different directions and we are required to frequently turn the book.

Even though authors of liberature work in more traditional media (which are frequently underestimated, as the examples mentioned above demonstrate), they are well-aware of the possibilities offered by new technologies. For instance, Nowakowski transferred (2005) a hypertext model into Hala 1000 Ton (Hall of the 1000 Tons, the name of one factory hall) in an old Norblin’s factory in Warsaw, and in doing so created an installation book.

The project was called Libro 2N (it is an anagram of the word Norblin: libro = book and 2N = Nowakowski+Norblin) and was defined as a journey into BLIN concept, which was enacted inside a book represented by the old workshop. Texts were written on walls, on the floor and on old-fashioned machines. After entering the workshop the reader was able to comprehend most of the possible configurations of the text,
but some of them remained hidden. The movement from hypertextuality to physical reality allowed the reader/nomad to decide how to combine parts of the text he/she was reading. The author even pulled fishing line in several places to link some lexias. Every trace of the reader’s journey marked up a new link in this unusual book. Thus, again Espen Aarseth’s classification was tested. The reader, who plays a vital part in the process of reading, is required to explore the text. Nowakowski did not have enough time to create a carefully designed structure of fishing net links; however the reader could use every accessible passage between the texts and machines.

E-lit made in Poland

To complete this presentation of the Polish literary tradition that led to e-literature, it is perhaps reasonable to say something about e-lit being created in Poland nowadays. The situation is not very promising as there are only 20 works of Polish e-literature (including even the simplest productions registered by the Internet portal Techsty) 34.

AE by Robert Szczerbowski is considered the first e-lit novel. It was originally published in volume form (1991) printed in such a manner that two separate texts were placed on both sides of every page. Its hypertext version (1996) 35 was very similar in form. From the first page the reader can enter two texts. One is a description of linguistic experiments conducted on words. The other is an attempt to explain the meaning of the experiment using words. This time, it is done in the form of a dictionary index, through which we can navigate. The novel has a simple structure and is relatively small (it consists of 101 short lexias).

AE is a pioneering text. However, there are some recent examples of hyperfiction that are more interesting from the structural point of view. One of these examples is, for instance, Czary i mary. Hipertekst (Hocus Pocus. A Hypertext) 36, a project dated 2007 written by Anteta Kamińska, and generated in Flash by David Sypniewski.

Texts appearing on screen always lead to other texts: to a hypertext poetry collection, to a blog devoted to teaching Polish to foreigners, to a webpage about public transport. The poems presented might send the reader to another tab in the browser, where animated texts or thyroid test results are displayed. Reading depends on paying attention because words and images move all the time. This kinetic text runs parallel to the first lexia of main text, which is, at the same time, being transformed – first we can see several sentences appearing in brackets (two of them are links to the next part of the hypertext; the other two are only animated sentences). The sentences form a first poem. Then a black-highlighted word appears on the same screen, followed by other words of similar appearance. These words form the next
poem. Upon completion of this “verbal animation” it turns out that all words on the screen are fragments of six poems which finally fill a browser’s window.

It is however quite difficult to notice the changes while watching the animation because this part of the work has controlled access. In order not to miss anything one should stop and observe.

Nevertheless, it is almost impossible to stop clicking as the text constantly misleads and provokes its readers. To explore more one has to return to the main tab in order to find words (frequently enclosed in brackets) that often lead no further, they are empty. If you desire to read a lexia appearing on screen you are required to discover the sequence of mouse moves that will reveal the whole text. Another trick used is the introduction of folding speech balloons which function as additional information, and sometimes also as a hidden link. In one of the poems, Kamińska incorporated a link to an email address encouraging the reader to continue her verses. *Hocus Pocus* might not be considered a masterpiece in terms of a literary work but its exploration is not momentary and the reading is never exhausted.

*Koniec świata według Emeryka* (*The End of the World According to Emeryk*, 2002) by Radosław Nowakowski is the most extensive example (250 lexias, more than 200 links). So far it is the only example of a literary work that has comprehensively used the possibilities afforded by the HTML of the time. The author’s experience in libera-
ture is evident. Nowakowski applies hypertext, but his texts are rooted within a more traditional background. He transfers some typographical solutions of the textual medium, e.g. those we know from *Calligrammes* or typographical layouts of Mallarmé.

In the words of Pisarski: “Statements create separate columns, assume spiral forms and other shapes: they circle like a hawk, zigzag like a fly stupefied by the lamp’s brightness, they can be a tree in a flower-pot or a board game. The art of mimicry is not limited to the represented world, it extends to the electronic, hypertext environment” (Pisarski 2004).

Webpages here are not short lexias, their structure is complex, and they are intersected with equally important excerpts of texts. The combination of words that appear on the screen in a single hit with words picked from another page allows the reader to travel (sightsee) in the world presented. It can either be a movement on: a macro scale (the shed – yard); or on a micro scale (the yard – grapevine). The entry of *The End of the World* into the browser window is yet another feature we might add to other typographical tricks. It appears to be floating clouds, which are in fact parallel sentences scudding over a blue screen. Scrolling the text on the screen is another movement required from the reader, for instance, as is done in the case of a
calligramme which resembles a lemon tree's stem. Devices used by Nowakowski are modest in terms of graphics, but they are used with utmost awareness.

Another hyperfiction worth mentioning is *Blok* (2002) by Sławomir Shutyy. There is no evidence as to whether or not the allusion to Perec is deliberate, even though it is definitely well-visible. On rue Simon-Crubellier 11 there is a tenement house which Georges Perec used in his novel *La vie mode d'emploi* (*Life. A User's Manual*). He took off the front of the house and reproduced everything that was inside – the apartments’ locations, all the numbers and names of the tenants. Similarly in *Blok* the eye of the camera (which follows the reader’s gaze) moves inside a block of flats frozen after a meal.

However, in *Blok* the net of connections is not as thick as in Nowakowski’s work, and not as well produced as in *Hocus Pocus*. The system of lexias and links is completed with comic book illustrations and commentaries appearing in speech balloons when the reader highlights a phrase which constitutes a link. The commentaries are especially interesting because they equip the novel with a kind of voice over.

In the margins of the experiments mentioned there is the poetic realization of *Low Fidelity* by Paweł Koziół. This hyperpoem is still being written (the latest update comes from March 29, 2007). Visually the browser’s screen is divided into three sections: poem space, index of plots picked at random space, and footnote space. All these elements are connected to a net of links. The quality of this project consists of two elements encouraging the reader to play with the text: the application of commentaries such as *put something*, and a completely obscure buzzing sound which disturbs the footnote space and is in fact a gif image activated by one of the links.

Other Polish novels are even more basic, they employ only hypertext connections. Some of these novels, e.g. *Tramwaje w przestrzeniach zespolonych* (*Trams in Joint Spaces*, 1997) by Dr Muto, quite apparently make use of materials prepared for print publication. This is especially evident in the length of the lexias – they are too extensive, they resemble short stories. I have to agree with Pisarski’s observation that most Polish hyperfiction is – the examples presented in this article excluded – based on texts pulled out of the artists’ drawers, forced to fit into the new medium in order to follow the current fashion (Pisarski 2004).

To sum up this presentation of the Polish achievements in e-literature, I would like to mention the artistic projects of Roman Bromboszcz, which are being constantly updated. We can find them on the *bromboxy webpage* or in the blog *gylyryjn fytyryz lydywych cybrstyrcyj* (the title should be deciphered as a gallery of folk cyberfuturists) which gathers literary works by Łukasz Podgórni. Both artists specialize in cyberpoetry. They announced the manifesto of their artistic group in 2006. They admitted to the influences of Futurism, Dada and the ideas of the Fluxus movement.
In this article I will discuss existing works by the artists, although they are still active in developing cyber poetry. Accompanied by Tomasz Misiak, they present their projects during performances in which the words are supplemented with sounds and images created live.

Flash projects of Bromboszcz resemble installations typical of concrete poetry which are then set into motion on the screen. They are minimalist in character. Their visual qualities seem to be inspired by the European Demoscene. In poems such as *artykulator*, *e.c.h.e.m.* or *prototyp* the outcome is controlled by the author: the reader has to add missing words, letters and wait for subsequent programmed hits. On the other hand, any accidental movement of the mouse betrays the fact that the reader might influence the animation, text or sound generation. In some cases there is a manual hidden in a place most visible – for instance in the title of the browser’s open window, just like in *prototyp 01: For keyboard user pres:ers: make use of the keyboard*.

Łukasz Podgórni is known for its animated poems written by an application that has similar set of conventions. The poems are to a larger extent inspired by the

Łukasz Podgórni’s *Oh, Breakneck Mother* (2007)
Futurism and Dada than Bromboszcz’s projects. *Matko zawrotna* (Oh, Breakneck Mother, 2007) is an interesting poem in which verses are set concentrically and whirl at high speed so that it is almost impossible to read them. When the reader clicks on the screen, the machine stops, but after a second it is again set into motion and this time accompanied by synthetic voices and sounds. In *w sprawie rimbaudowych ‘samoglosek’ i innych* (about Rimbaud’s vowels and other issues, 2007), Podgórni experiments with words, testing Rimbaud’s concept of synaesthesia. Rimbaud combined colors with vowels and described their qualities. Podgórni omits the descriptions – clicking on colorful vowels activates animated projects creating the synaesthesia of the text, the dynamic image and the synthetic speech.

To the examples already mentioned one should add another project by Paweł Koziół, Bluzgator Bis. It is so far one of the two Polish text generators, and the only cybertext-machine in Polish e-literature. Bluzgator Bis is based on the freeware application Bluzgator, which randomly generates Polish swear words. Koziół used the original mechanism and creatively transformed the accompanying dictionary. Except for his own texts, he employed excerpts from: entries published in the *Ideas* section of *Textiles Encore. A Dictionary of Polish Young Culture*; sentences from Polityka weekly magazine; and quotations from *Ha!Art* magazine. Moreover, the reader can make further changes in the vocabulary of Bluzgator Bis. It is an interesting cybertext according to Aarseth’s typology. The literary work is indeterminate and allows the reader to configure it through limiting or expanding the vocabulary. Such a possibility activates textual dynamics (TDT) typical for cybertexts – the reader decides about the number of textons available to the program.

**What it takes is just a little courage:**

*Outro*

While traversing the Polish way to e-literature I tried to show those literary works which, when observed from the ergodic perspective, start to function as text-machines. One must admit that the most ambitious experiments date back to the period of baroque. Poems written during that period show many qualities typical of other national literatures. This is not very surprising given the wider knowledge of Latin and the use of the same standards in poetic dictionaries.

Later examples were also inspired by experimental movements initiated in Europe, yet even though they are interesting as realizations of avant-garde projects, they are not complex cybertexts that could compete with mathematical experiments.
of the OuLiPo. Polish literary output, interesting from the formal point of view, has ergodic qualities only on the level of explorative actions.

The tradition of e-literature, especially those works which focus on poetic message, is another level of avant-garde activities in the Polish literature of the 20th century. It is not a straightforward continuation, but it does draw on the experiences of prewar avant-garde movements, as well as from some other prior works. However, working in isolation does not explain the far from impressive state of Polish digital literature.

Such a state has resulted from Poland’s delayed access to modern technologies due to the policy of the communist government. I take the risk of mentioning that Poland missed the age of Story Space and was plunged directly into the age of blogs. Polish e-lit was produced most fervently from 1996 to 2002, when both computers and access to the Internet were less popular than today. Perhaps this is the reason why such literary activities had difficulty finding their readers. However, there were some experimental projects, for instance, collaborative writing. One might mention here the idea of writing a novel (2001) together with Jerzy Pilch, a popular Polish author, organized by the weekly magazine Polityka and portal Onet.pl. This included a shared production of poems by users of the chat multipoezja.onet.pl, which was moderated by poet Michał Zabłocki.

Liberary artists seem more productive today. The longest Polish hyperfiction so far, The End of the World According to Emeryk, was also created by a liberary artist. This liberary work, together with Aneta Kamińska’s Hocus Pocus, could represent Poland in the next issue of the Electronic Liberature Collection. Kamińska’s projects show that Polish e-literature can still develop and even achieve a certain degree of magnificence. It seems that sometimes authors lack not only the knowledge of the digital techne, but also something much more important. This was nicely put by Michał Butor (who is often quoted by our liberary artists): “It is sufficient to look at newspapers, announcements, textbooks, scientific books and other such publications. Artists have so much at their disposal, it is difficult to ignore it. What it takes is just a little courage” (Bazarnik 2002, 128, underlined by A.P.).
Notes

1 Due to differences in the Polish and English syntax the visual concept of the poem disappears in translation. In the Polish version, verses start with 'not' and 'no' which can thus be easily cut from the rest of the poem.

2 In 1919, Jasieński and Młodożeniec established a Futurist Club called Katarynka (Hurdy-Gurdy) in Cracow.

3 *We emphasise three basic moments of contemporary life: machine, democracy and the crowd.* The translation is without spelling mistakes deliberately made in the original-language version.

4 On the other hand, if one treats the empty spaces between words only as results of the words *in liberty rule*, then the text could be read in a traditional manner.

5 Word-play. ‘Tworzy’ in Polish means to create, ‘dla’ is a pejorative suffix. ‘Tworzydła’ stands for something negative in language.

6 *The maximum of image allusions with the minimum of words* is the most famous guideline in the theory of Functionalism produced by Przyboś.

7 ‘Something between words’. Przyboś claimed that meaning is generated not only with what the words carry, but also with relations between them (thus ‘międzysłowie’); he was interested in meanings that are produced when words clash.

8 In 1937, Kobro signed (as the only artist from Poland) the *Dimentionalist Manifesto*, published by J. Arp, M. Duchamp and L. Moholy-Nagy.


10 A combination of two words: ‘concepts’ and ‘shapes’.

11 As we all know, missing letters rarely make the proper understanding of the text impossible. Writings on American road signs can serve as an example here.

12 In their poetry they used the official language used in government newspapers, television, as well as expressions overheard on the street.

13 Karpowicz 1999, 106-107

14 The Polish title is ambiguous and a part of its meaning is lost in translation. ‘Pokątny’ means ‘secret’, but it stems from the word ‘kąt’ which in Polish means ‘angle’.

15 The number II placed next to the name suggests a secondary character of those utterances.

16 Potkański also compares Karpowicz’s poetry to the construction of scholastic arguments.
More on the Polish silva rerum and the ergodic perspective can be found in Mariusz Pisarski’s article “Silva Rerum – “A Book of Everything on Anything” as a Cybertextual Experience” in this volume.

It is worth paying attention to the fact that nowadays some blogs function in exactly the same way; the authors and the wreaders (readers/authors) might add their own material, in addition to other texts and multimedia.

The novel was written in French and published in 1810 – fourteen years after the last volume of Laurence Sterne’s *Tristram Shandy*. The Polish translation was not ready until 1847.

The word ‘pałuba’ in Polish has many different meanings and it would be most difficult to produce such an ambiguous title in English. The meanings are: 1. stump, trunk; 2. clumsy or stupid person; 3. clumsy doll; 4. evil old woman, or a female demon; 5. a hood over a cart; 6. straw used to clog a chimney.

With meta-fictional levels and multi-angled perspectives, *The Hag* anticipated experiments of Marcel Proust and Gide, and Nabokov’s *Pale Fire* which has very similar structure (Foreword, poem, Commentary, Index).

*The Wedding* (1910) is a symbolic drama about the situation of the Polish nation during that time and its chances to regain independence.

Even though *The Pulp* was published at the time of growing popularity of nouveau roman, literary critics (Ritz 1993), question its post-modernist character.

Due to the political situation, *The Pulp* could not be published before 1980, but this edition and the following ones were not complete, which makes the effort of publishing it a non-trivial action. The complete version was published by Puls in 1982.

This is the first complete edition of *Arw*. Previously some excerpts were published in the literary magazine Poezja no. 7/1980.

Another meaning is ‘freedom’. It is used in liberature by Julián Ríos. However, the Spanish author uses the term to define ‘liberating books’, which is an entirely different meaning than that proposed by Zenon Fajfer.

*Treatise on Pageography* is a liberary work but also a treatise about liberature, although Nowakowski claims that “this treatise is not to explain anything. It is to open a new territory. Or to lead or invite to the territory not new and not very well known”. (Nowakowski 2002-2008, 7)

Nowakowski is also the translator of the legendary hyperfiction *afternoon. a story* by Michael Joyce, which has not yet been published.

30 This solution is somewhat similar to Aya Karpińska’s work contracted by iPhone (Shadows Never Sleep. Zoom Narrative), in which we open subsequent lexias by applying the maximum zoom possible.

31 The text appears also on the backs of those pages that present the fronts of buildings.

32 Despite presenting approximately 600 possible combination variables, Aarseth’s theories do not offer the chance to describe interesting formal solutions, such as looping a printed book.

33 In Russian cuisine, ‘blin’ means a pancake fried in a frying-pan.

34 I present a list of the Polish digital literary works in the References section.

35 This was the first Polish publication of its kind to hit the market; for more about AE, see Emilia Branny-Jankowska’s article “The destruction of text in Polish e-literature” in this volume.

36 The poem registered on the Internet is an excerpt from a printed version of the entire collection of poems under the same title. In the printed edition there are also links/requests, which fit the demands of the medium, for instance: go back three pages, find a difference, and turn off the computer.

37 It is interesting that in the fourth number of Techsty Magazine (techsty.art.pl/english.html) Dorota Sikorska generated an interactive review of Hocus Pocus using Flash. This was certainly the first time this kind of review was made in Poland, and was possibly also the first to be made globally.

38 Shuty read separately: z Huty; the nickname refers to Nowa Huta, a district in Cracow.

39 “The demoscene is a computer art subculture that specializes in producing demos, which are non-interactive audio-visual presentations that run in real-time on a computer. The main goal of a demo is to show off programming, artistic, and musical skills”. Source: Wikipedia.org

40 English equivalents: articulator, e.c.h.o., prototypes.

41 Swearer, Encore.

42 The second is a much more modest project entitled Text Messages Day After Day. A Book for Everyone and for Nobody (2007) by Marek O. Bulanowski, which generates text messages.

43 The texts written by the chat users were later used as lyrics on the record A Debut by the group Czesław śpiewa.


References


Cybertext Yearbook 2010


