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Typography, How Noticeable Is It? Preschoolers Detecting Typographic Elements in Illustrated Books

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Abstract: The present study aimed to investigate whether preschoolers, who do not have formal reading skills, can detect information conveyed by typography in illustrated books for children. An additional aim of this study was to examine students' options in relation to their age. Forty six (46) children of preschool age, both boys and girls, participated in the research. Twenty five (25) of them were infants and twenty one (21) were preschoolers. The basic tool used in the research was a page from an illustrated book, which was chosen for its variety of multimodal data based mainly on conventional or expressive typography. Semi-structured individual interviews were used for data collection, which were tape-recorded and, later on, were transcribed and processed. Each interview lasted fifteen (15) to twenty (20) minutes approximately. According to the results of the research, capitalized, bigger or bold letters, the use of underlining, the presence of designs and punctuation marks seemed to have attracted children's attention in combination with their pre-existing familiarity with some letters. The results also highlighted the need for teachers to take advantage of the typographic elements -often abundant in illustrated books for children- and integrate them into the context of developing strategic reading for preschoolers, simultaneously, leaving room for further research.

Keywords: Typography, Multimodal Texts, Strategic Reading, Preschoolers

Introduction

The prevalence of literacy in the Western societies, which exclusively emphasized language texts, has been at the expense of other communicational modes of meaning-making, such as the visual or the audio mode (Kress & Van Leeuwen 2006). However, the revolution in the domain of technology and communication in conjunction with the dominance of the visual element in both electronic and conventional formats has led to reconsidering the literacy learning context, as new learning needs have arisen (Unsworth 2001). Contemporary texts impose a new definition of literacy. In this context, there was a shift from literacy to Multiliteracies, which draw on six design elements, the linguistic, the visual (images, page layouts, screen formats etc.), the audio (music sound effects), the gestural (body language), the spatial (environmental and architectural spaces), and the multimodal pattern of meaning (the one that associates the first five modes of meaning to each other and focuses on the multifarious integration of these different modes to construct meaning (Cope & Kalantzis 2000). In fact, the Multiliteracies Project addressed the highly multimodal nature of texts in contemporary society and the ways the various semiotic modes are combined in order to extend rather than replace the current traditional literacy practices centered only on language (Fairclough 2000; Kalantzis & Cope 2000). In addition, it highlighted new ways of reading and approaching written texts emphasizing the fact that becoming a reader/viewer of multimodal texts involves multiple tasks in addition to solely reading the words of a text. Therefore, multimodality refers to the active and dynamic interrelationship among the different semiotic modes of meaning which individuals can draw on during interaction with various written texts to derive meaning, though one mode can prevail over the rest (Baldry & Thibault 2006; New London Group 1996).

Different modes contribute to the meaning-making process, among which typography holds a prominent role in multimodal texts (Jewitt 2005). Typography is commonly considered to be the art and technique of arranging type -letters, numbers and punctuation marks- in order to make

language visible. As such, typography deals with the selection of typefaces, point size, line length, line spacing, spaces between groups of letters and spaces between pairs of letters aiming at the best possible organization of the verbal graphic language in space in order to facilitate the reader's needs. In addition to letterforms, punctuation is considered to be equally important to typography and typographic meaning, as it "gives words the necessary structure and context in order to fully understand what is being communicated" (Nicholas 2004, 233). Absence of punctuation leaves readers with no visual hints. Our ability to communicate meaning and convey emphasis is widely supported by punctuation. Nowadays, punctuation is usually related to structure rather than sound, as it provides marks to indicate when the reader should pause to give emphasis (Nicholas 2004); in fact, early writings featured excessive punctuation. Effective typography renders typed texts legible and easy to use. Legibility is the quick, easy and correct recognition of the forms of letters and words and depends on the typographic presentation of a text. A text of limited legibility is difficult to read. During the last decades there has been a bulk of research on legibility in order to establish the best typographic styles for young readers (e.g., Walker & Reynolds 2003; Watts & Nisbett 1974; Wilkins, Cleave, Grayson, & Wilson 2009). Research on this field questioned the form of the fonts (sheriff sans sheriff), the best point size for young or efficient readers, the design of the fonts and so forth. Yet, typography goes beyond this commonly accepted definition, as it also has to do with organizing language -or more generally, information (Twyman 2004). Till recently, the main part of the research on typography has not dealt with the potential meaning of typography. The printed verbal discourse was not considered to be a semiotic mode in its own right; however, as it was mentioned by Kress and van Leeuwen (2001), typography uses a variety of semiotic resources. In fact, the multimodal approach to typography was initially suggested by Theo van Leeuwen (2005, 2006). He applied the Halliday's metafunctional theory (1978) to typography and introduced a system of distinctive typographical features of the letter forms, such as weight (bold/regular), slope (sloping/upright), expansion (condensed/expanded), curvature (angular/rounded), connectivity (connected/disconnected), orientation (horizontal/vertical) and regularity (regular/irregular) outlining their semiotic potential (van Leeuwen 2006). The distinctive features are combined in different ways so that one typeface can be described as bold, expanded, sloping, rounded, connected, oriented towards the horizontal dimension and regular, whereas the combination of distinctive features can be quite different from another typeface. In this way, van Leeuwen (2005, 2006) proposed a grammar of typography based on the semiotic principles of connotation, that is, the import of meanings the signs had in their original domain to the new one, and metaphor, that is, the metaphoric potential of specific features of letterforms.

Although typography traditionally focused on readability and aesthetics, van Leeuwen's (2006) approach to typography, especially to letterforms, had to do with meaning. For example, roundness can convey the meaning of something 'smooth', 'soft', 'natural', 'organic', 'maternal', (149). Moreover, Norgaard (2009) applied the multimodal theory of typography to literary texts taking into account 'the general tendency in literary criticism to disregard the semiotic potential of typography in literature' (141). She diversified to some extent the van Leeuwen's theory by proposing the addition of colour to the distinctive features of the letterforms, the peircian notions of 'image' (relations based on similarity between the signifier and the signified) and 'index' (physical and/or causal relation between the signifier and the signified) and she discussed the 'discursive import' of letterforms already mentioned by van Leeuwen.

Typography is a basic interpretative act for literature, full of chances for knowledge (Bringhurst 2004). Typographical meaning has been always important for literature, although some uses are typographically more inventive than others (Norgaard 2009). McCloud (2006) recognized the semiotic power of typography in comics and novels, asserting that words become graphically what they depict and provide readers with the ability to 'hear with their eyes' (146). What is more, contemporary picture books require that teachers allow for the visual images and design elements in their discussions and instructional experiences to help students construct

meaning (Serafini 2008). The semiotic potential of typography in literature for both adolescents and children was also emphasized by Gibbons (2012). Although most studies recognized that modern illustrated or picture books for children made extensive use of multiple modes, they mainly focused on the visual way of conveying meaning, mostly visual images used in books, without emphasizing the contribution of typography (Doonan 1993; Styles 1996; Styles & Arizpe 2001; Walsh 2003). In this way, a rather small body of research deals with the typographical meaning potential in illustrated books (e.g., Papadopoulou, Kouka, & Poimenidou 2010; Walsh 2000; Yannikopoulou 2004; Yannikopoulou & Papadopoulou 2004).

The application of the multimodal theory to typography can provide a systematic description and analysis of the typographic meaning-making process, providing, thus, a systematic, analytic methodology and a descriptive apparatus which could interpret the combination of the different semiotic modes in communication (Machin 2007). Important though it may be, the main interest in the application of a multimodal theory to typography resides in whether different readers'/viewers' categories are at first able to notice and then understand the potential meaning of typography. Thus, more research is needed to determine whether readers can take notice of specific typographic features that convey meaning.

The Present Study

In this context, acknowledging typography as a semiotic mode, the main purpose of the present study was to investigate whether preschoolers (4 to 6 years old), who lack formal reading skills, could notice conventional or more expressive use of typographic features that provide visual salience in illustrated books.

In particular, this study explored whether preschoolers while reading/viewing a page of an illustrated book for young children could take notice of typographical features, such as the use of capitalized, bigger or bold letters, underlining, use of designs and punctuation chosen by the graphic artists to add visual salience and suggest ways of reading the text. It was initially assumed that the presence of images or designs as well as the combination of expressive typographic features would mostly attract students' attention, as the visual side of the language or anything that diverges from the typical typographic form of writing is even more impressive and important, especially for those who cannot read properly. An additional aim of this study was to examine students' answers in relation to their age. It was expected that older participants would notice more typographic elements, as the younger children are, the fewer salient aspects of a situation or an object they tend to concentrate on (Wood 1998).

Method

Participants

A total of forty six (46) children (4 to 6 years old), nineteen (19) boys and twenty seven (27) girls participated in this study. Twenty five (25) of the participants were five to six years old and twenty one (21) were four to five years old. The participants were drawn from four (4) state nursery schools in the city of Volos, in central Greece, while one nursery school situated in a rural area around the city of Volos. The choice of the sample relied on the following criteria: the children were not faced with learning difficulties or any other mental disorder; they had not developed formal reading skills yet. The two first criteria were judged based on their teachers' perceptions, while the development of formal reading skills was assessed through a short test administered prior to the main study. All participants had Greek as their first language (L1).

The Tool Used to Elicit Data

The basic tool used in the research was a Greek page translated into English by the researchers, a letter, in particular, sent by one of the heroes of the story (see Appendix), drawn from an illustrated book entitled “My Unwilling Witch (The Rumblewick Letters)” and written by Hiawyn Oram (2006). The story is about Rumblewick that is a witch’s cat and is faced with a serious problem. Namely, his witch, Haggly Aggy, does not want to be a witch any more. She just wants to be an ordinary girl and do ordinary girl things. In fact, she desires to get married to a prince. How can he persuade her that witchy ways are the best? In the particular page, the desperate cat is writing a letter to Uncle Savva to ask for help, as the prince does want to get married to the witch!

The particular page was chosen for its variety of multimodal features based mainly on conventional or expressive typography. Namely, an interplay of the use of capitalized, bigger or bold letters, underlining, designs, and punctuation marks was available in this page. Evidently, the various typographic choices were not made at random, but they called for a multimodal approach. Analyzing the distinctive features of the letterforms by means of the system provided by van Leeuwen, the font can be considered to be slope (imitating handwriting), bold, rather expanded, mainly rounded (with some angular parts) and horizontal (with some vertical parts), disconnected and irregular. The visual salience was produced by the parts that were bolder, more expanded and more angular and mainly by the parts that exhibited expressive irregularity created by letters ending with a design (see Appendix). In addition to the letters’ weight, angularity, expansion and irregularity, emphatic punctuation (capitalized letters, underlining and extensive use of exclamation points or question marks) contributed to visual salience. The visual salience provoked by the above mentioned features could be interpreted as a simple attempt to attract children’s attention and highlight specific pieces of information. In fact, many aspects of the text give the impression of ‘childish’. Letters’ irregularity in two cases (in the case of the word ‘chilled’ with the appearance of strokes over the final syllable of the word, and in the case of the design of the spider accompanying the writer’s name of the letter) facilitates: a) a physical connection between the signifier and the signified (1st case, chilled) and b) a metaphoric transposition to the imaginary world (2nd case, the design of the spider). The print-handwritten text provides a rather accurate visual transcription of a verbal utterance of high orality, while it creates the meaning of sonic salience and emphasizes certain words. The most salient parts indicate an unexpected change in the normal flow of the story; in those cases, the visual salience could be seen as an expression of the writer’s emotional state.

Data Collection and Coding

Data were collected through semi-structured, individual interviews. The interviews were characterized as semi-structured because, though they drew on a pre-designed question, they, simultaneously, allowed for greater flexibility (McDonough & McDonough 1997). The main question which the whole interview process relied on was “Looking at this page, can you tell me if there is anything that attracts your attention? And why?”. Each individual interview lasted fifteen (15) to twenty (20) minutes approximately and was carried out in Greek, the participants’ mother tongue. The interviews were conducted at the different nursery schools and were tape-recorded; then, they were transcribed verbatim to have objective record, preserve actual language used and reanalyze data after the interviews being conducted (Nunan 1992). The authors-researchers independently coded the results and met to discuss the coding scheme. The researchers coded the data until they had reached 90% agreement (inter-rater reliability) on the coding of the participants’ answers. In cases in which disagreement on the coding occurred, the researchers compared their coding schemes and discussed possible discrepancies to arrive at a high level of consistency concerning the number and type of typographic elements detected by preschoolers as well as the reason why they were noticed. (Charmaz 2000, Patton 1990). Overall,

the thorough data management and analytic procedures, such as the verbatim transcription and accurate records of the interviews, contributed to the validation of the research findings.

The research was part of a broader survey on preschoolers’ ability to derive meaning from multimodal texts, which was conducted in spring of 2011 and lasted for three months.

Results

The data of the present study were analyzed using the Statistical Package for Social Sciences (SPSS) version 17.0. In accordance with the aims of this study, descriptive statistics as well as the statistical analysis of chi-square were computed. The level of significance was set at .05. To examine the typographic features noticed by the preschoolers descriptive statistics, particularly frequencies, were computed. It was revealed that most of the students were able to notice at least one typographic feature (39,1%), two (28,3%) or even three (19,6%), while very few preschoolers (2,2%) reported on no elements at all (see Table 1).


Table 1: Number of Elements Noticed X Number of Students

<i>Number of Elements Noticed</i>	<i>Number of Students - Frequency (Percent %)</i>
0,00	1 (2,2)
1,00	18 (39,1)
2,00	13 (28,3)
3,00	9 (19,6)
4,00	3 (6,5)
5,00	1 (2,2)
7,00	1 (2,2)

Additionally, in order to investigate whether students’ number of answers varied according to their age, a chi-square analysis was performed. The results revealed that children aged five or six ($M = 2.24, SD = 1.45$) seemed to report more elements than younger children aged four or five ($M = 1.85, SD = 1.11$) but this difference was not found to be statistically significant, $\chi^2(6) = 3.81, p > .05$.

At the same time, it was deemed necessary to further investigate the frequency of each and every typographic feature in order to find out which particular feature(s) drew students’ attention most. The reported typographic elements that drew students’ attention most and their frequency are depicted in the following Table (see Table 2):

Table 2: Frequency of Each Typographic Feature Noticed Separately and Preschoolers' Reported Reasons for their Noticing

<i>Elements</i>	<i>Frequency of each Typographic Feature Noticed (Percent %)</i>	<i>Reasons for Noticing the Specific Element</i>
<i>Element 10</i> 	16 (34,8)	the use of image, holistic visual impression, similarity to the initial letter of their names
<i>Element 2</i> <u>ΚΑΤΑΣΤΡΟΦΗ!</u> (DISASTER!)	11 (23,9)	capital letters, the size of the letters, holistic visual impression, underlining
<i>Element 3</i> <u>ΔΕΝ</u> (NOT)	10 (21,7)	underlining, capital letters, bold letters
<i>Element 8</i> ΠΟΣ; (HOW?)	10 (21,7)	punctuation marks, capital letters, bold letters, holistic visual impression
<i>Element 9</i> ανατριχιασμέν ^ν ος ^ι (chilled)	9 (19,6)	the use of image, holistic visual impression
<i>Element 5</i> «φοβερό» (“amazing”)	8 (17,4)	punctuation marks, holistic visual impression, the size of letters
<i>Element 4</i> «Κρεατοελιές; (“Moles?)	7 (15,2)	holistic visual impression, similarity to the initial letter of their names
<i>Element 1</i> Αγαπητέ Δελε Σάββα, (Dear uncle Savva)	7 (15,2)	the combination of capital and small letters, similarity to the initial letter of their names, the size of the phrase (long phrase)
<i>Element 7</i> Πρέπει (Must)	6 (13,0)	the size of letters, holistic visual impression
<i>Element 6</i> παρακαλάει (begging)	6 (13,0)	special font
<i>Element 11</i> <u>ΠΑΡΑΚΑΛΩ</u> (PLEASE)	6 (13,0)	underlining, capital letters, bold letters, holistic visual impression
<i>Element 12</i> ΤΡΗΤΟΡΑ! (QUICKLY!)	1 (2,2)	no justification

In addition to the above quantitative analyses, qualitative analyses were, simultaneously, conducted in order to investigate the reasons why preschoolers noticed the specific typographic features. At this point, it should be mentioned that from the ninety-seven (97) preschoolers' answers, twenty-five (25) were not justified. In this way, based on the analysis of their seventy four (74) answers, it was found that their answers were mainly based on the expressive typographic features of the words, while few preschoolers referred to other reasons, such as the similarity to the initial letter of their names or to the size of the phrase. Namely, the visual salience that characterized each of these words was the main reason for attracting students' attention and interest. In particular, the preschoolers' reported reasons for taking notice of the specific elements are also presented in Table 2.

Drawing on the above tables, the typographic features that preschoolers could detect are summarized below: letters' irregularity and particular letters ending with a design, letters' expansion, letters' weight, letters' angularity, letters' size and, to some extent, the letters' slope. In addition to these features that mainly refer to the typeface, underlining and punctuation, especially question marks, exclamation points and quotation marks, attracted their attention. Finally, in some cases, in which the children were not able to specify the typographic feature that attracted their attention, they solely referred to the holistic visual expression of the words.

Discussion

The main aim of this study was to explore whether preschoolers, who have not developed formal reading skills yet, could notice information conveyed by conventional or more expressive typography in illustrated books for children. According to the results of this study, it was found that most of the children, forty (40) out of forty six (46), were able to notice from one up to three typographic features, while only one child failed to refer to any feature at all, which verified the initial hypothesis of this study based on the contribution of visual salience to conveying text meaning (McCloud 2006; Norgaard 2009; van Leeuwen 2006). The fact that a number of children (39,1%) noticed only one word or 28,3% of the children two words, while they had the chance to notice out of a variety of twelve (12) words, is indicative of the preschoolers' trait of centration, a term introduced by the Swiss psychologist Jean Piaget, which refers to young children's tendency to concentrate on one salient aspect of a situation or an object at a time and neglect others; the opposite term is decentration, a feature of older children, which involves children's skill to focus on multiple attributes of a situation or object (Wood 1998). An additional aim of this study was to examine students' answers in relation to their age. It was revealed that, though older students tended to take notice of more elements than younger ones, this difference was not found to be statistically significant, which failed to verify the initial hypothesis of this study requiring further research.

The results of this study demonstrated that the children's answers were mainly based on conventional or more expressive typographic features of the words, while few references were made to other reasons, such as the length of the phrase or the similarity of the initial letter of words to their name; these two strategies have been widely used by preschoolers in the attempt to approach literacy, as highlighted by Papadopoulou and Poimenidou (2004). To be more precise, it was revealed that these preschoolers were mostly able to notice and refer to the presence of images or designs and the combination of expressive typographic features, such as the use of underlining, capitalized, bigger or bold letters, condensed or extended type of writing and punctuation marks that seemed to have attracted children's attention in conjunction with their pre-existing familiarity with some letters. At the same time, it was found that the reference to the size of the letters was quite common among these preschoolers, as the presence of bigger letters renders the text more familiar to preschoolers indicating that it is addressed to their age; on the

contrary, it is a common belief at this age that texts consisting of smaller font size are usually addressed to older people (Papadopoulou 2001b). In addition, it should be mentioned that some preschoolers did not justify their answers, while a number of students gave a general answer, such as, “because I like it” or “it is just funny” without focusing on particular reasons for their answers implying the concept of holistic visual impression. After all, any deviation from the conventional typographic form of text writing makes the text impressive, funny, and familiar to preschoolers, as at this age they are usually exposed to multimodal texts where the visual mode and, particularly, the expressive typography prevails over the rest (Baldry & Thibault 2006; Cope & Kalantzis 2000; New London Group 1996; van Leeuwen 2006).

The results of this study demonstrated that the holistic visual impression of words or the presence of particular typographic features, such as letters’ expansion, letters’ weight, letters’ angularity, letters’ size and, to some extent, the letters’ slope, underlining, punctuation, especially question marks, exclamation points and quotation marks, can attract students’ attention and interest. The presence of multimodal elements in texts helps readers, firstly, focus on the visual elements of texts and then, on language. This process is, particularly, critical for preschoolers that have not developed formal reading skills yet in the attempt to have an early access to literacy. It seems that the presence of more than one semiotic mode in a text can draw students’ attention, as it was shown that preschoolers focused and commented on the multimodal elements of the text. Previous research has highlighted the contribution of expressive typography to written speech, especially for young children (Papadopoulou 2001a; Yannikopoulou & Papadopoulou 2004; Yannikopoulou 2004; Papadopoulou, Kouka, & Poimenidou 2010). Concurrently, Maun and Myhill (2005) have accentuated that the presence or absence of visual elements in a text can affect readers’ motivation to go through it.

In this context, the specific typographic features that were presented in this study can be used to attract preschoolers’ attention and interest in written texts. Namely, a number of multimodal texts consisting of similar expressive typographic features can be used in nursery classes to help preschoolers approach written texts and familiarize them with the concept that information is conveyed not only by language but by other resources, such as typography (Kress & van Leeuwen 2006). In fact, preschoolers, who have not developed literacy skills yet, tend to draw on the visual mode when approaching written texts; this tendency can be cultivated and enhanced by educators, as nowadays the meaning-making process is highly multimodal where the various modes of communication interact to produce meaning (Baldry & Thibault 2006; Kress, Jewitt, Ogborn, & Tsatsarelis 2001; New London Group 1996). However, Kress and van Leeuwen (2006) have pointed out that educators do not seem to teach students how to take advantage of the various semiotic ways in order to derive text meaning, as they tend to emphasize language more. Therefore, students should be taught to allow for the various semiotic modes in order to have better access to literacy, especially nowadays when students, even from an early age, are exposed to an increasing dominance of multimodal texts -both print and digital texts that involve a complex interplay of linguistic elements, visual images, graphics, and design elements (Kress et al. 2001; Kress & Van Leeuwen 2006; Unsworth 2001). At the same time, teachers should instruct students to take advantage of typographic features -often abundant in illustrated books for children- and integrate them into the context of developing strategic reading with the goal of helping them have access to literacy. In this way, literacy pedagogy, particularly, the meaning-making process of reading comprehension skill, needs to be modified, as it can no longer be viewed as a process that is centrally contingent on language, but as a process where the various modes of communication are either woven jointly or are separated to produce meaning in order to keep up with the constantly changing world and meet the communicational demands of the era (Kress et al. 2001). What is probably needed is teachers’ constant professional development through pre-service and in-service teacher education courses, so that educators can be informed of contemporary research findings with a special focus on the critical role of visual literacy in nursery classrooms (Celani 2006).

In addition, it is necessary for those that are involved in illustrated literature or children’s literature to become aware of the contribution of the visual mode to the meaning-making process in order to make extensive and conscious use of expressive typographic elements in books with the goal of helping readers have access to literacy and comprehend written messages more efficiently. This assertion is congruent with previous research (Xatzisavvidis & Gazani 2005), who have held that the use of multimodal or expressive typographic features in illustrated books is not directly related to the goal of helping readers have access to literacy but is simply associated with the idea of making an instant impression on readers and attract their interest.

Nonetheless, in the present study, there are a couple of limitations that should be considered. One limitation of this study is that the number of the participants is not big enough. At this point, it should be mentioned that the researchers had difficulties in having access to younger, that is, four-year-old participants. In addition, it should be made clear that this study did not tap into the correlation between the reported typographic features and students’ understanding of the text. Children, who did not have formal literacy skills, participated in the research to investigate the importance of visual elements conveyed by typography in this particular page of an illustrated book. The present study acknowledging the visual salience of the various typographic features constitutes an attempt to investigate whether preschoolers could take notice of these typographic elements that are extensively used in literature books for young children with the goal of addressing the highly multimodal nature of texts and the way educators could take advantage of these features to help students, especially preschoolers, have access to literacy. In this context, further research that can probe into the correlation of the reported typographic elements with students’ text understanding is needed to extend and verify the results of this study. Future studies can explore whether children who have developed literacy skills can better understand and interpret the use of visual features allowing for context as well.

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APPENDIX

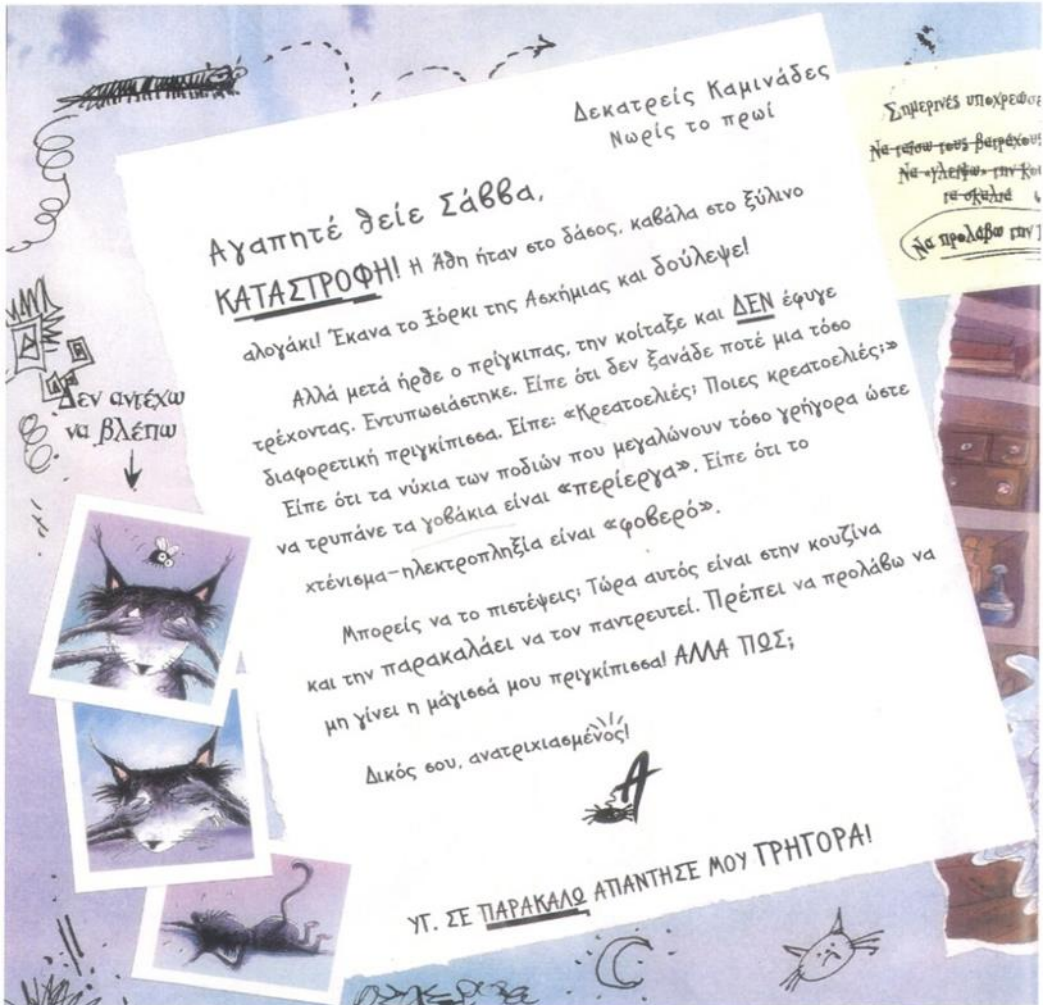


Figure 1: The Extract of the Illustrated Book

Source(s): Oram (2006).

Thirteen Chimneys

Early in the morning

Dear Uncle Savva,

DISASTER! *Athi was in the forest riding on the wooden horse toy! I cast a spell on her to become ugly and it worked out!*

*But then the prince came, he looked at her, and he did **NOT** run away. He was impressed! He said that he had never seen such a different princess. He said: "Moles? What moles?"*

*He said that it is "**strange**" for the nails of the feet which grow so quickly to open holes in pumps. He said that the hairstyle that looks like an electric shock is "**amazing**".*

Can you believe that?! At the moment, he is in the kitchen and he is begging her to marry him...

*I have to do something so that my witch won't become a princess. **BUT HOW?***

Yours, chilled



*Ps. **PLEASE, RESPOND QUICKLY!***

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