

ARTICLES:

News Graphics: Some Typological and Textual Aspects

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1. Introduction

The article deals with a research project aiming at doctoral theses in applied linguistics. The main purpose of the project is to find out what the division of labor between the different semiotic elements of the text is, how the textual and visual elements convey meanings and mediate information in news texts. Besides the written news text, the research project, as a whole, covers all types of visuals including news graphics and news photographs. In this article, a typology of news graphics is presented. In addition, the relations between the information contents of written news text and news graphics are discussed and some preliminary suggestions are presented about the role of news graphics as a mediator of information in news stories.

The research material consists of news articles and features that include news graphics. The material of the whole research project has been published in the daily *Helsingin Sanomat*, the largest newspaper in Finland, on a period of six months from the beginning of January to the end of June, the year 2001. The total amount of news articles and features in the research material is over 1800 items. A typological content analysis of 359 items of news graphics in 274 news articles and features is presented in this paper. Additionally, an example of a thematic analysis is presented. The news articles and features have been published in January 2001.

The material of the study originates from one newspaper and, consequently, the aspects of comparison have been left out. It would have been problematic to make a comparison between two or more newspapers for two reasons. The first reason is the lack of Finnish material that could be compared with *Helsingin Sanomat*. *Helsingin Sanomat* is the only large daily newspaper in Finland. The smaller Finnish newspapers use less news graphics and they often buy it ready-made from news services. Therefore, it is assumable that the use of news graphics does not

differ very much between the smaller newspapers and it cannot be compared with the news graphics of Helsingin Sanomat. The second reason is that a comparison with newspapers from other countries would have brought cultural aspects into this work. Albeit very interesting, this aspect is left to be dealt with in future studies. The present work is an intracultural study, an analysis of news graphics in one newspaper within one language and culture.

At first, I will discuss the theoretical background of the research project. Thereafter, I will present a typology of news graphics and results of the analysis concerning the frequencies of the different types of news graphics in the material. This part of the analysis has been made in order to find out the conventions in the use of news graphics. Thematic analysis is applied to reveal the relationships between news graphics and the other elements of the news text (in this case, written text). Thematic analysis is presented with the help of a practical example.

2. News graphics as a research object

News articles belong to multisemiotic texts. These are texts that consist of several types of signs that belong to different semiotic systems, such as written language, iconic and typographic systems. News articles and news graphics include diverse semiotic systems that, in turn, require a command of different codes in order to be interpreted in a correct way. (See also Järvi 1996, 1997; Kress & van Leeuwen 1996.)

News graphics, or information graphics, is usually defined as a combination of text and other visual elements, e.g. different types of graphs, charts, maps, tables and lists, diagrams and drawings, that complement the written news texts. News graphics is also described as the third language of news apart from verbal texts and news photographs. Thus, it is understood to have an independent position as the mediator of information in news texts. (Henning 1988; Mervola 1995; Salo 2000; Åberg 2000.)

In this study, the definition of 'news article' follows van Dijk (1988: 5). Consequently, all frequently reappearing material, such as weather reports, the lists of radio and TV programs, listings of sports results or the stock exchange etc. has been excluded from the study, and the analysis is focused only on genuine news articles of Helsingin Sanomat. At this stage, news articles and features are studied as one group and the differences between the use of news graphics in news articles and features will be dealt with in more detail in future studies. Therefore, the terms *news article* and *news story* refer to both news articles and features in this paper even though some preliminary differences between news articles and features will be discussed in connection with the presentation of results of the study (see Tables 2 and 3).

Both news graphics and news articles in the material are assumed to include specialized knowledge since the texts deal with such matters as politics, economics,

technology, culture, sports or topics related to scientific work. In the context of newspaper texts, the sign systems of news graphics are perceivable by vision and the medium is the printed newspaper. News graphics can also be presented in other media such as television or the web but these channels and the corresponding sign systems are not dealt with in this study. (See e.g. Huovila 2001.)

The use of news graphics is related to a phenomenon called *visualization*, which means that information, in general, is disseminated not only by words but to a growing extent with nonverbal means, such as images, graphs and other visual representations. Different contexts produce different types of sign systems, and their correct interpretation also requires the existence of shared codes. (For the different sign systems, see Järvi 1995; 1996; 1997.) Visual representations are not any more considered to belong only within the realms of fine art or personal creative work. Instead, they are understood to have the capacity to represent various types of information content. (See e.g. Horn 1998; Tufte 1991; 1992; 1997; Ware 2000.) Illustrations in user manuals are one example of this (e.g. Schriver 1997). Visual representations are also considered to be tools that are used to create and push forward meanings. For example, van Dijck (1998) argues that popularization of science, especially in genetics, is a kind of theatre where spectacular popular images are produced in order to raise the interest of the possible investors to scientific research. (See also Henning 1988; Salo 2000.)

The semiotic approach, as a starting point for analysis, is well known in applied linguistics. Languages for special purposes, lexicography and terminology science have long traditions of semiotic research (e.g. Hupka 1989; Picht 1994; Pilke 2000; Wüster 1970 [1931]) and the need for this kind of research is constantly growing. Concurrently with the globalization, the importance of visual communication is widely recognized. (E.g. Horn 1998; Marcus 1996; Schriver 1997.) The semiotic approach is also connected with discourse analysis through functional grammar. Semiotics and functional grammar share the conception of language as a semiotic system (Eggins 1994; Hakulinen & Karlsson 1995; Halliday 1994) and the same applies to visual grammar presented by Kress and van Leeuwen (1996).

The study of news graphics belongs also to the area of media studies and thus the use of news graphics could be analyzed as a part of journalistic practices. The starting point for the present research is, however, not media studies but applied linguistics and a semiotic perspective on language. In this research project, news graphics is analyzed in its context, which is the news article as a whole including news text, photographs and other types of illustrations.

There are only few Finnish studies on news graphics. Elonen (1998), Kiimalainen (1993) and Åberg (2000) are master's theses. All these works are comparative, intracultural works that focus on the use and production of news graphics with journalistic practices as starting points. Mervola (1995) has studied the changes in the outward appearance of Finnish newspapers from the 1770's until the 1990's and Huovila (2001) has made a comparison between news in newspapers,

television, World Wide Web and cellular telephone. Both Mervola and Huovila discuss news graphics on a general level and do not give any exact information about different types of news graphics or about their contents. Salo (2000) discusses visual journalism, but only shortly and without a special focus on news graphics. Most of the literature on news graphics is more practically orientated, e.g. Sanomalehden ulkoasuopas (1988), Uutisgrafiikka (1989) and Visuell visjon - i fritt fall? (1995).

3. Research methods

The analysis of multisemiotic texts requires a combination of different methods due to the interdisciplinary nature of the research material. One method alone cannot be applied to analyze the different aspects of the research material, such as the use of colors, principles of composition of news photographs, analysis of statistical graphs or written news texts.

The research methods that are applied in the research project as a whole are content analysis and thematic analysis. These methods are complemented with two other methods: image analysis and analysis of image and text relations.

Content analysis is used as a research method in order to create a typology of news graphics and to reveal the conventions in the use of it. (About content analysis, see Titscher, Meyer, Wodak & Vetter 2000.) The basic conceptual framework of the thematic analysis derives from Koskela (1996). Koskela has analyzed theme-rheme structures in Swedish scientific and popular scientific texts. She has analyzed whole texts and their thematic structures and used utterances (main clauses together with their complements) as the unit of analysis. On the textual level, the basic concepts in her analysis are 'textual themes' and 'hyperthemes'. Textual theme is "the overall knowledge frame that motivates all the thematic elements in a text" and hypertheme "an overall theme for a longer stretch of a text, for example a paragraph" (Koskela 1996: 210-211). Hypertheme – or hyperthemes – are always in a subordinate position in relation to the textual theme of a text. They take up different aspects of the textual theme and can be identified for example, with the help of subtitles of the text. The concepts 'textual theme' and 'hypertheme' correspond to the concepts of 'makrotema' and 'mikrotema', as presented in Hellspång (2001: 35-36) and Hellspång and Ledin (1997: 117-122).

According to Koskela (1996: 74; 211) the definition of textual theme and hyperthemes in a text is an intuitive process that can proceed either in a top-down fashion, i.e. from the point of view of the context, or in a bottom-up fashion, i.e. starting from the single utterances and their thematic elements. In the present work, the process follows the top-down fashion starting from the context of news texts. The units of analysis are the texts as wholes as well as the written parts of the texts and the news graphics. After the identification of themes in the material, the thematic relations between written texts and visuals are studied with the help of a classification presented by Schriver (1997: 412-432).

The relationships between verbal and visual elements of texts presented by Schriver are redundant, complementary, supplementary, juxtapositional and stage-setting relationships. In redundant relationship, identical content appears both visually and verbally. The same key ideas or themes of the text are repeated in different modes. In complementary relationship, different contents are presented in different ways but both modes are equally important in making the text understandable. In supplementary relationship, one mode (verbal or visual) dominates the other while the other elaborates, reinforces, or instantiates the themes brought up by the dominant mode. In juxtapositional relationship, different contents are also presented in different ways, but there is a clash or tension between them that underlines the key ideas of the text. Juxtapositional relationships between written text and images can often be found in advertisements. In stage-setting relationship, there are different contents in visual and verbal elements but one of the modes forecasts the themes presented in the other mode. An image on a book cover is an example of a stage-setting relationship between a visual element and the written text since the image should give some kind of an idea about the contents of the book.

4. Typological content analysis of news graphics

News graphics in my material divides into five main categories. These are: statistical graphs, maps, images, tables and combinations of two or more types of categories. 'A statistical graph' is a graphic representation of statistical, quantitative information. Pie charts, area graphs and line graphs are some examples of statistical graphs. 'A map' is a pictorial representation of geographical information. Cartograms carry geographically distributed statistical information and thus they, according to the definition, are not counted into maps but into the group of statistical graphs. 'An image' is a pictorial representation of a person, a situation or any kind of an object. Images do not present any statistical or geographical information. They are pictorial in the sense that they resemble the objects they represent even though some image types are quite schematic. Flow charts, organization charts and process charts are examples of more schematic images. The group 'tables' consists of news graphics in which information is presented with the help of vertical and horizontal lines that form a grid. Especially in text charts, vertical lines (and sometimes also horizontal) are left out but the idea of grid remains because of the grouping of the text. In case a table presents quantitative, statistical data, it is grouped into data matrices, a subcategory of statistical graphs. Data matrices and cartograms have many common features with the other types of news graphics, especially tables and thematic maps, but statistical information is the basic characteristic that distinguishes these categories from tables and maps. The group 'combinations' consists of combinations of news graphics that belong to different categories. (For different types of news graphics, see Harris 1996.) The distribution of the main categories of news graphics in the material is presented in Table 1.

Table 1. Distribution of news graphics in Helsingin Sanomat in January 2001.

Type	Statistical graphs	Maps	Images	Tables	Combinations	Items Total
Items	121	130	33	36	39	359
%	33,7	36,2	9,2	10,0	10,9	100

The most frequent groups among the different types of news graphics in Helsingin Sanomat are maps and statistical graphs. Two thirds of all items of news graphics are either maps or statistical graphs. The percentage of maps is slightly higher than that of statistical graphs, but the difference between the two groups is only 3 percent. Images, tables and combinations form three minor categories of approximately 10 percent each. Of these, the least frequent category is images and the most frequent is combinations.

One third of the news graphics consists of statistical graphs of which the most frequent types are bar graphs, line graphs, pie graphs, data matrices, cartograms and different combinations of statistical diagrams. Statistical graphs are figures that are also used in scientific contexts. Even though they are used in newspaper stories, they still have a strong connection to statistics and require a command of the mathematical code to be created and interpreted correctly. Statistical graphs are, however, easy to produce with modern desktop computers and illustration software.

The largest group of news graphics, maps, has been divided into subcategories of locator maps, structure maps, planning maps, thematic maps and combinations of maps. A locator map shows where something is located or where something happens. Structure maps give an idea of how parts are related to a whole. Planning maps, according to their name, show future development and thematic maps show a local or global distribution of ideas or practical matters without a statistical point of view. The majority of the maps in the material are locator maps.

Images are, probably, the most spectacular type of news graphics but, at the same time, they are the smallest group in the material. This is understandable since the production of images is time-consuming and journalists compete with deadlines in their practical work. The other types of news graphics are more easily produced and they are in many cases available as ready-made via news services and other sources of information.

Tables are listings of text, images, figures or combinations of these that include other than statistical information. A temporal aspect is often connected with tables.

In such cases, the information is presented in the form of timetables. Tables often include typologies and offer a possibility to make comparisons between different categories.

Combinations offer readers a possibility to receive multifaceted information about the matters dealt with in the news story.

In order to find out how the different categories of news graphics are related to the contents of the news stories, the distribution of news graphics in the different sections of Helsingin Sanomat was analyzed. The results of this analysis are presented in Table 2.

Table 2. Distribution of news graphics in the different sections of Helsingin Sanomat in January 2001.

Type	Statistical graphs	Maps	Images	Tables	Combinations	Items Total
Finnish News	35	30	3	1	2	71
Finnish Politics	10	3	-	1	2	16
Helsinki News	13	20	2	6	6	47
Arts and Culture	1	3	-	5	-	9
Sports	-	3	-	9	2	14
International News	5	42	3	2	6	58
Business	34	9	5	6	12	66
Features	18	17	19	6	10	70
Other pages (Editorial, Letters to the Editor, Front Page)	5	3	-	-	-	8
Total	121	130	32	36	40	359

As the results show, news graphics can be found in all sections of Helsingin Sanomat, including editorials, arts and culture and even letters to the editor. It

would be interesting to compare these results with other Finnish studies, e.g. with Mervola (1995) who has studied the changes in the outward appearance of Finnish newspapers from the 1770's until the 1990's or Huovila (2001) who compares news in newspapers, television, World Wide Web and cellular telephone. However, both Mervola and Huovila discuss news graphics on a more general level and do not give any exact information about the distribution of different types of news graphics. Åberg (2000) has studied the use of news graphics in Swedish newspapers in Finland. She, however, divides news graphics only into maps, statistical graphs and the group 'other news graphics' and does not report her results in detail when it comes to the different groups on different pages. In Åberg (2000), the results of the use of news graphics in general on pages concerning e.g. Finnish news vary between 9 % and 78 % depending on the newspaper. In Hufvudstadsbladet, the largest Swedish newspaper in Finland, the percentage of news graphics on Finnish pages is 41 % (year 1996) and 51 % (year 1998). On business pages, the percentage is 27 % (year 1996) and 10 % (year 1998), on international pages 13 % and 10 %, on sport pages 2 % and 9 % and on Sunday feature pages 14% and 16 %. The matching percentage for Finnish pages in my study is 37 % (Finnish news, Finnish politics and Helsinki news), business pages 18 %, international pages 16 %, sport pages 4 % and features 19 %. The trends in my study and Åberg's study seem to be unidirectional since the highest percentage of news graphics is on Finnish pages, the lowest on sport pages and the next lowest on international pages. However, the results cannot be compared directly.

It is not surprising that maps, especially locator maps, are used abundantly in international news, but it is striking that they form a very large group also in Finnish and Helsinki news. Why this is so, needs more consideration. Griffin and Stevenson (1994) have studied locator maps in foreign news. According to Smith and Hajash (1988) maps account for almost 46 % of news graphics in 30 US newspapers. However, only one half of these are locator maps and the other half is weather-related maps which are not included in the present study.

Statistical graphs are found on all pages except sport pages. Especially the Finnish news pages include a large amount of statistical graphs. Tables, in turn, are more common on sport pages than in the other sections of the newspaper. Combinations are most common in the feature section.

In this material, there also seems to be a difference between features and news articles. The division between the different types of news graphics seems to be much more even in features than in news articles. Some explanations for this can be offered. Firstly, the discourse practices in features and news articles are probably different since features are more general and sometimes also more entertaining to their nature than traditional news articles. This probably also causes some special practices in the use of visuals. Secondly, there is a large variation between the subject matters on the feature pages and thus also between the uses of news graphics as can be seen in Table 3.

Table 3. Distribution of news graphics on feature pages of Helsingin Sanomat in January 2001.

Type	Statistical graphs	Maps	Images	Tables	Combinations	Items Total
Food	-	1	-	-	-	1
Computers	-	-	3	-	1	4
Travel Pages	2	10	-	-	-	12
Science and Environment	1	2	9	2	1	15
Leisure	4	1	-	-	2	7
Cars and Traffic	5	1	2	1	2	11
Consumer Pages	2	-	1	1	2	6
Sunday Special	4	2	4	2	2	14
Total	18	17	19	6	10	70

The distribution of news graphics in features is not as even as it looks at the first glance, especially when it comes to travel pages and science and environment pages. The subject matters ‘tourism’ and ‘travel’ explain the notable number of maps in this part of the material. The considerable number of images in science and environment pages also results from the contents of the stories. News graphics is here used to produce simplified and popularized explanations about complicated processes in the nature. The number of statistical graphs is large even in this part of the material. A reason for this is probably the fact that journalists quite often use statistical reports as sources for the news stories. The use of statistical graphs may also serve a rhetorical purpose in the news texts since graphs probably maintain the idea of reliability.

5. Thematic analysis of the news story *The Expected Length of Life*

The news story that deals with the concept ‘the expected length of life’ (in Finnish, *Elinajanodote*) is a short two-column article on page A 6 in the section of Finnish affairs. The text is probably based on statistical information material since the source of the news graphics is Statistic Finland, a statistical bureau that operates under the Ministry of Finance and produces two thirds of all government statistics in Finland. The story is built around an illustrative example, a baby boy Veeti and his family. Veeti was born in November 2000 and he has some health problems. He is the third child in a family that can be characterized as a typical modern Finnish working class family. Veeti’s parents are quite young and they seem to have only basic education from the upper secondary level. Veeti’s mother smokes and some relatives have died in heart attacks and strokes. In spite of all this Veeti’s expected length of life is 73 years 10 months. (See appendix 1.)

Some other facts about the expected length of life are gathered around the story about Veeti. These are the technical definition of the key concept: “The expected length of life of a newborn baby tells how long he or she will live on an average if the mortality in the same age group remains on a normal level” (*Elinajanodote kertoo, kuinka vanhaksi vastasyntynyt keskimäärin elää, jos hänen ikäryhmänsä kuolleisuus säilyy ennallaan*) and the more popularized definition “The standard measure of well-being” (*hyvinvoinnin mitta*). Some theoretical and practical matters that affect the length of life are also presented (sex, the way of life, social background, the level of education, the standard of medical care and the innovations in medicine). The written story of Veeti creates a contrast between the practical problems of average people and the more analytic and theoretical considerations on the length of life from the statistical point of view.

The black-and-white item of news graphics in the same story is a statistical graph, a line graph that presents statistical information about the expected length of life in Finland during the years 1750-2000. There are two lines, one for men and the other for women. The item also includes a vignette, an emblem of a newborn baby and two square-formed dialog balloons that indicate the number of expected years for men and women born in the year 2000. No other visuals are included in the news story.

Vignette is a small picture that is used repeatedly in connection with certain types of news stories, for example on the sport pages small pictures of cars are used as vignettes in news graphics concerning car racing. The same emblem of a newborn baby has also been used elsewhere in Helsingin Sanomat in connection with news graphics that deals with babies. The vignette functions as a visual anchor between the line graph and the written text. It is connected to Veeti and all the babies born at any time between the years presented in the news graphics.

Square-formed dialog balloons, quite similar to those in comic strips, are frequently found in news graphics. According to Kress and van Leeuwen (1996: 67), dialog balloons are representations of narrative speech processes or mental processes that the participants of semiotic acts produce and interpret. In the case of news graphics, there seem not to be any perceivable “senders” of the dialog at present and the message itself, based on statistical data, is quite unambiguous. Probably the use of dialog balloons in news graphics is rather a matter of convention than a matter of narrative discourse practice.

The textual theme of the news story is ‘the expected length of life’. Everything in the whole text is related to this key concept. The story of Veeti, the definitions of the concept and the matters of influence are hyperthemes in the written part of the text. The statistical graph includes one extra hypertheme, the expected length of life during the years 1750-2000. This historical information is found only in the line graph, not in the written text. At this point, the relation between the visual and verbal modes is supplementary. However, redundant information can also be found. The expected length of life of men and women born in the year 2000

appears both in the written text and in the line graph. The uses of the vignette and the dialog balloons are conventional in the same way as the use of titles and subtitles in the written text or the use of title in the item of news graphics.

6. Conclusions

News graphics in this material has been divided into five main categories: statistical graphs, maps, images, tables and combinations of two or more types of categories. The analysis shows that maps and statistical graphs form the two largest groups in the material. Combinations, tables and images form smaller groups that do not have notable differences when it comes to the frequencies. Maps are found abundantly both on Finnish and international pages, statistical graphs are used on all pages except sport pages. Especially the Finnish news pages include a large amount of statistical graphs. Tables, in turn, are more common on sport pages than in the other sections of the newspaper. Most images are found on feature pages, especially on science and environment pages. Combinations are most common in the feature section. Items of news graphics can be found on all sections of the material, including e.g. editorials. There are some differences between news articles and features but more research is needed to find out the underlying reasons for these. There probably are differences in discourse practices between news articles and features and the variety of subject matters may also have an effect on the use of news graphics.

Journalistic practices may offer explanations for the use of some types of news graphics. The abundant use of statistical graphs may result from the use of statistical materials as sources for the news stories. The large number of locator maps on international pages as well as in Finnish sections may result from the journalist's answer to the traditional question "where". Even though images are traditionally considered to be the most prominent group of news graphics, they are the smallest category in Helsingin Sanomat. Working practices may also here render an explanation since the creation of images is more time-consuming than the production of the other types of news graphics.

The use of news graphics probably serves the principle of economics in language. For example, statistical graphs and tables offer the possibility to make very detailed comparisons between the different aspects of information in the news article. If presented in a verbal form, these comparisons would be long and uninteresting. Now, only the most striking details can be brought up in the verbal text and the rest is presented in the form of news graphics. In this respect, the use of news graphics seems to, at least to some extent, resemble the use of visuals in research articles (Magnet 2001). Since news graphics is also capable to bring new hyperthemes into the text, more information is provided for the readers who are able to read news graphics, e.g. statistical graphs. However, news graphics also makes it possible to convey complex information in a simplified way. In other words, news graphics can be defined as a means to popularize the text. (Cf. Miller 1998.) Additionally, the reliability of the news article may be enhanced with the help of news graphics,

since relevant information can be loaded in the graphics. This can also give the reader the idea that the text is more reliable than it necessarily is.

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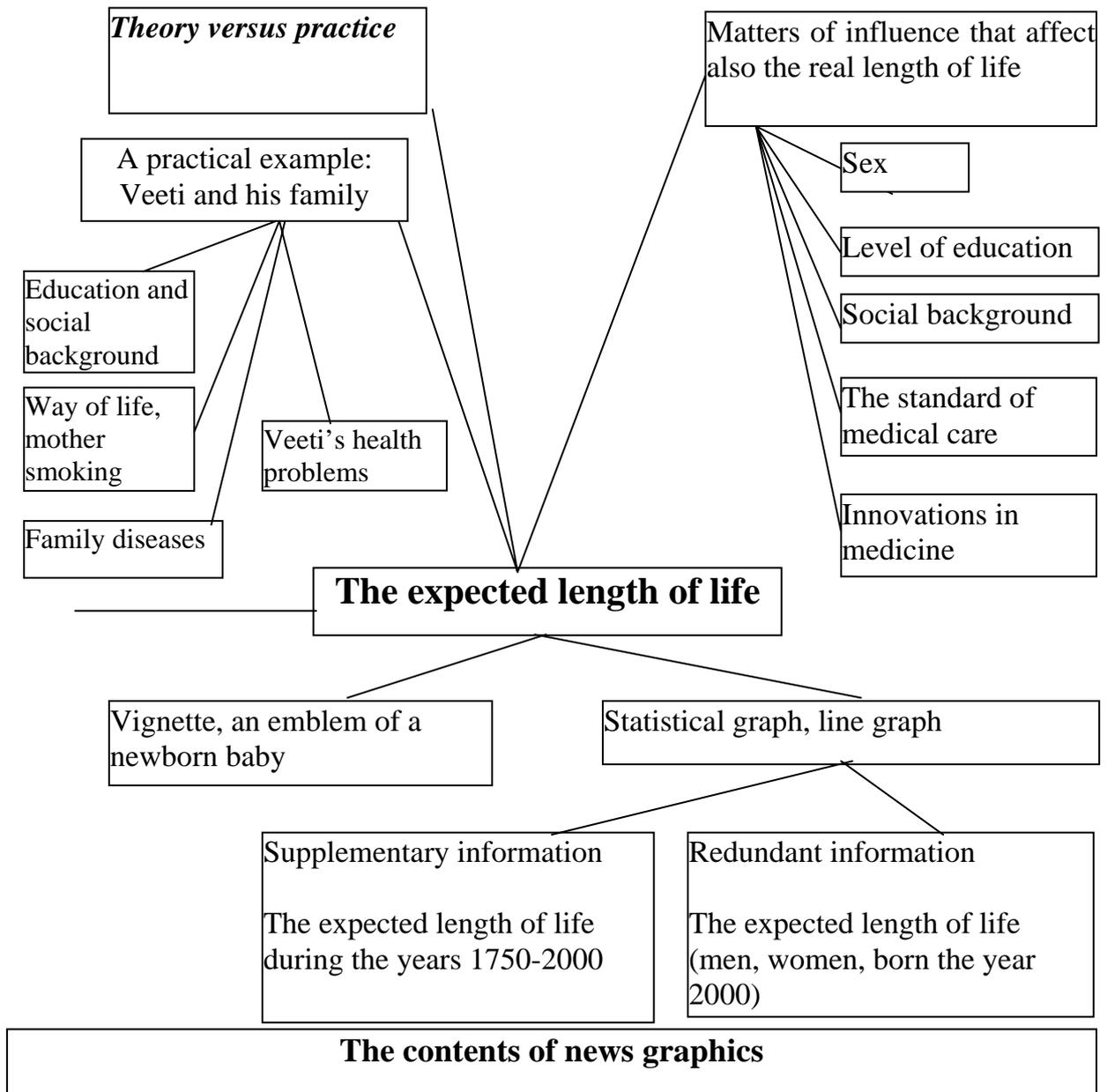
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Appendix 1.

The contents of the news text

Definitions of the theoretical concept 'the expected length of life': "The measure of well-being"

The expected length of life of a newborn baby born the year 2000 is 73,8 years (male), 81 years (female) if the mortality in the same age group remains on a normal level.



ABSTRACT

News Graphics: Some Typological and Textual Aspects

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The aim of this article is to present a research project of news graphics. In this article, some results of an analysis concerning the frequencies of the different categories of news graphics in the material are presented. This part of the analysis also tries to examine how the different types of news graphics are related to the subject matters of the news stories. The relations between news graphics and the written text are analyzed with the help of a thematic analysis. The analysis model is presented with the help of a practical example. At the end, some preliminary suggestions are brought up into discussion about the role of news graphics as the mediator of information in news stories. The research material consists of 274 items of news articles and features that include news graphics. The material has been published in the Finnish daily *Helsingin Sanomat* in January 2001.
