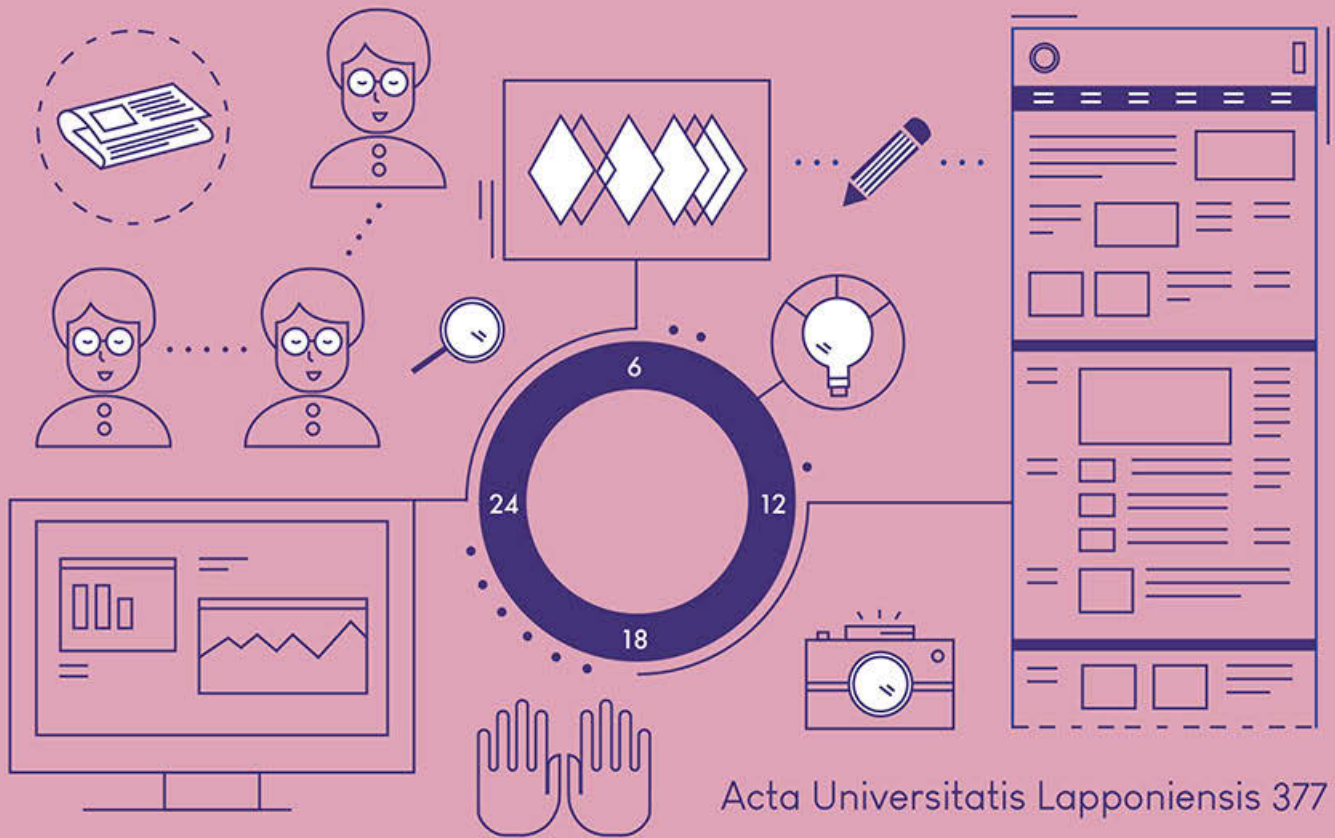


Yiyun Zha



Acta Universitatis Lapponiensis 377

MAKING THE VOICE

Exploring Design Professionalism
in Visual Information Structure of News Websites

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Academic Dissertation

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of the Faculty of Art and Design at the University of Lapland
in the Esko ja Asko auditorium on 10 November 2018 at 12 noon



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Abstract

The emergence and proliferation of new media have challenged newspapers. Technological developments and changes in people's reading habits regarding the news have led to the growing importance of the online reader experience in an era of increased competition among media companies. Newspaper circulation has been affected, and new ways of connecting with a mass audience in time and space have become necessary. Therefore, the biggest effect of the new media is the demanding requirements for creative workers. This research project seeks to fill this gap by focusing on the communication design innovations of the visual information structures of news websites. To make daily online newspapers possible, editorial processes and creative work are bound to follow highly structured rules, so that the workflow can be continuous and consistent. Thus, the main research question has arisen: "How is visual journalistic professionalism maintained and projected by the visual representation, given the opportunities and challenges posed by media convergence?"

Finland is among the top countries that started online newspapers quite early, yet the implementation of new media techniques that have led to enhanced journalism has been overlooked, especially in Northern Finland. In recent times, there has been increasing concern about sustainability for online publishers in the new media landscape. The challenge, perhaps, is no longer to prove whether readers are passive objects in their engagement with the media but to argue that reader experiences should be improved through new modes of communication on news websites. More attention has been focused on the cultural differences regarding narratives in technological and social moments by explaining the interrelations of pictures, texts, genres, and interpretation. Using the ethnographic research methodologies of qualitative observation and quantitative analysis, it is possible to monitor trends in the development of newsroom cultures and visual journalists' professional identities.

The research consists of case studies of two Finnish newsrooms, representative of Northern Finland and Southern Finland, regarding the effect of organisational cultures on visual journalists' daily routines and practices. An overview of marketing and journalists through interviews and surveys is also included to deepen our knowledge of the actors and factors that affect visual

journalism in the context of organisational cultures. The goals are to create awareness of design professionalism and to promote visualisation in online newspapers.

Keywords: visual journalism, Finnish online newspapers, ethnographic research, design professionalism, news websites

Content

1. Introduction	
1.1 Primary objective and scope	13
1.2 Research question and targets	15
1.3 Overview of methods	19
1.4 Dissertation structure	21
2. Professionalism Perspectives	
2.1 Introduction	25
2.2 Institutional perspective	27
2.3 Organisational perspective	29
2.4 Producer perspective	34
2.5 Summary	37
3. Visual Literacy Primer	
3.1 Introduction	41
3.2 The basic values	43
3.2.1 Colour scheme	44
3.2.2 Form	46
3.2.3 Depth	49
3.2.4 Movement	50
3.2.5 Layout	51
3.3 Theories of visual literacy	54
3.3.1 Gestalt	54
3.3.2 Semiotics	56
3.3.3 Cognition	60
3.4 Interactive information graphics	62
3.4.1 Information visualisation and data visualisation	63
3.4.2 Multifunction	65
3.4.3 Multimodality	68
3.5 Summary	71
4. Editorial Creativity in News Websites	77
‘Editorial creativity in news websites: The three dimensions of hierarchy, sequence and consistency’, <i>INTEGRATED MEDIA IN CHANGE</i> , pp.43–62.	

5. Shaping Information Structure of Graphics in Online Journalism	99
'Shaping information structure of graphics in online journalism', <i>VISUAL THINKING</i> , in publication.	
6. The Role of a Visualist	137
'The role of a visualist: Transforming stories in a newsroom', <i>TEXTUAL & VISUAL MEDIA</i> , 10, pp.117-134.	
7. Unpacking Communication Tensions in Visual Transmediation	159
'Unpacking communication tensions in visual transmediation from print to digital papers', <i>COMMUNICATION DESIGN: INTERDISCIPLINARY AND GRAPHIC DESIGN RESEARCH</i> , vol.5(O1-O2), pp.165-182.	
8. Conclusions	
8.1 Lessons learned	181
8.2 Further discussion and implications	184
8.3 Reservations and limitations	187
8.4 Final remarks	188
References	191
Acknowledgements	201
总结 (中文简介)	203

CHAPTER 1

Introduction

1.1 Primary objective and scope

This doctoral dissertation investigates the visual information structure of news websites by considering visual journalistic ideology as digitised production and distribution technologies. Especially in an era when the circulation of print newspapers is shrinking, it is important to explore the demanding requirements for in-house creative workers in newsrooms. Together, the four articles comprising the dissertation illustrate how professional ideology informs visual practices for sustaining communication in journalistic institutions in an increasingly challenging media landscape.

Finland is among the countries that started online newspapers quite early, and the per capita consumption of print media in Finland has long been one of the highest in the world. The newspaper industry model was built upon a structure of strong national and provincial papers, supplemented by smaller, more local papers (Picard & Grönlund, 2003). Thereafter, newspaper reading became a widespread activity among Finns, especially because of the home delivery system. Meanwhile, it should be noted that the largest media companies in Finland actively developed new forms of web-based publications during the second half of the 1990s, but the lack of revenue forced them to cut back on these activities (Lehtisaari, Karppinen, Harjuniemi, Grönlund, Lindén, Nieminen, & Viljakainen, 2012). It is partially because of a strong newspaper reading tradition (Nieminen, 2010) that new media practices have not been implemented and enhanced journalism has been overlooked, especially in Northern Finland.

Newspaper reading was most popular among 35–64-year-olds, and Finnish newspaper readership in either the printed or digital format was about 88 percent (Sanomalehtien Liitto, 2016). The digitisation of information and news distribution suggests a positive outlook for the newspaper industry, while traditional newspapers¹ are having trouble in coping in a society with omnipresent real-time media. Media convergence has arrived in Finnish newsrooms and has been a trend in the media industry (see for instance, Flew, 2017). It makes sense to distribute digital newspapers to households in Lapland because of the distribution difficulties in a relatively large but sparsely populated region. Lapland is the largest (92,661 km²) and northernmost province of Finland with a population density of 2.0, according to statistics from 2010 (cf. Björkroth

¹ According to Merriam-Webster, it must be noted that in English, the ‘newspaper’ refers only to the print version or the company that publishes it. But I wish to separate newspaper and online newspaper, so the term ‘traditional newspapers’ here refers to printed newspapers, as opposed to online newspapers.

& Grönlund, 2014). Newspapers, either national or regional, have encountered enormous challenges, such as budget limits and technological capabilities, in using the new platforms to serve consumer needs.

Driven by the issues surrounding the current second wave of convergence (Lehtisaari et al., 2012), I examined in-house visual practitioners' responses to the challenges of media convergence by looking at specific Finnish daily newspapers – *Helsingin Sanomat* and *Lapin Kansa*. Based on its circulation, *Helsingin Sanomat* is the biggest national newspaper in the South, while *Lapin Kansa* has the largest regional newsroom in the Lapland area, according to Lehtisaari et al. (2012). Rather than conducting a comparative study, I examined the new requirements for in-house visual journalists' workflow and practices. This study is not a manual for visual journalists. Instead of proposing insightful guidelines for future visual journalists, it focuses on the ways in which these two newsrooms create, deliver and capture value through communication practices.

In a broader sense, media convergence is a direct consequence of the Internet and the digitisation of all media content, as it brings together computing, communication and content (Flew, 2017). Its implications have been discussed in different areas, including technology, industry, media content and journalistic practices (cf. Storsul & Stuedahl, 2007). This study approaches media convergence from the perspective of the visual journalist. Instead of focusing on the literature on convergence, I investigated how the design professions perceive convergence in their work in the selected Finnish newsrooms. I focus on the designers who conduct their work mainly in the art and design departments, rather than in engineering, as convergence cannot be understood solely in technological terms.

The new media revolution has created a growing concern for the sustainability of online publishers. For newspapers, convergence has created opportunities for presenting content in multimedia formats (text, photo, audio, video, graphics, etc.) and distributing these products across different platforms. At the same time, it has posed challenges for news practitioners to actively accommodate the new modes of communication and to re-create content for these digital delivery formats. Regarding the opportunities and challenges created by convergence, the research has approached the professionalism of visual journalists, whose production ultimately shapes the visual information structure of news websites, from various angles.

1.2 Research question and targets

The goal of this study is to illustrate the visual information structure of news websites by focusing on the values and ideology projected in visual journalists' practices, especially in a context where more attention has been paid to online news than to print versions. The primary research question is thus:

How is visual journalistic professionalism maintained and projected by the visual representation in light of the potentials and challenges posed by media convergence?

I conducted ethnographic research in the two above-mentioned Finnish newsrooms to gain a deeper insight into visual journalists' workflow. The results of the fieldwork in the newsrooms, the four articles comprising this study all contribute to addressing the overall research question from their various perspectives. The research questions outlined in each of the articles are related to the primary research objective, while the findings and contributions are placed within the context of the overall topic. The process is illustrated in a diagrammatic blueprint (Figure 1). It helps to elucidate the relationships among the articles, the research questions and the methodology.

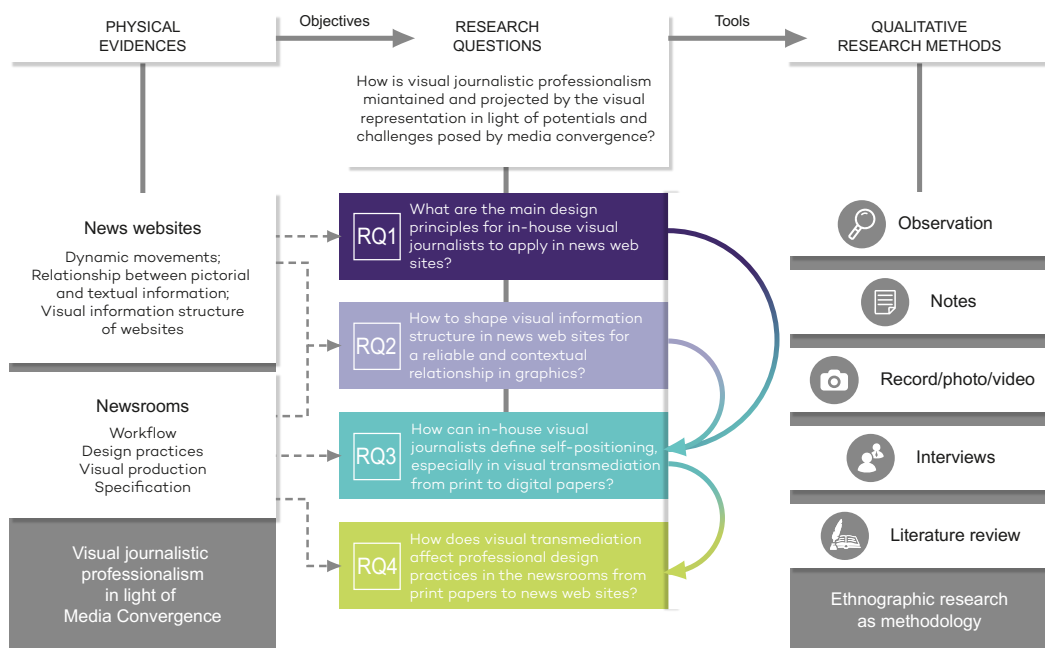


Figure 1. Diagrammatic overview of the dissertation.

RQ1: What are the main design principles for in-house visual journalists to apply to news websites?

Article 1 (Chapter 4) investigates two Finnish online-only newspapers, *Taloussanomati* and *Uusi Suomi*, and analyses their layout designs. The article focuses on the text-image relationship in web news from two perspectives – social semiotics and the meaningful text-images conveyed by the online platform. Social semiotic perspectives are converged in the text-image relationship to examine the ideologically projected principles of online news visualisation. The article finds that adaptation to the online medium is essential in three aspects: hierarchy, sequence and consistency. Not only are these three values embodied in redesigned news websites, but the problems faced by Finnish online newspapers, at least the earliest versions, also reveal the multimodal opportunities for the online medium in the following aspects:

- a) Presenting specific informational properties in context, e.g., colour, font, image, resolution and texts;
- b) Elaborating the relationships between visual and textual information by deliberately gathering the appropriate elements to compose a larger unit;
- c) Organising the page into a hierarchical structure for consistency;
- d) Working visually for a better reader experience.

RQ2: How can the visual information structure of news websites be shaped for a reliable and contextual relationship through graphics?

After investigating the main design principles applied in news websites in the first article, Article 2 (Chapter 5) focuses on how the graphic structure is conceived in the creation of the visual elements on news websites. This article proposes a framework for developing knowledge on creating information salience through aesthetic inputs, with implications for visualisation from a multimodal perspective now that combinations of modes have become commonplace in online journalism. Through visual representation examples, the article sets theoretical distinctions with information designs to clarify the ways in which visual composition creates information salience, thereby enhancing the meanings embedded in graphics. Overall, the visuals are systematically approached on three levels – nodal point, articulation and communication environment – among which reliable relations exist in visual components. This

article contributes to the primary objective by increasing our understanding of design as a constructive engagement in visual-journalism analyses, rather than a developed form of craft.

RQ3: How can in-house visual journalists define self-positioning, especially in the visual transmediation from print to digital papers?

Visual journalism became a concept in academic discussions in Finland about 25 years ago. There was a need to include layout and typography in academic discussions of journalistic research and practice (e.g. Brusila, 1997). Visual journalism is now understood as information graphics, data journalism, photography and editorial design. It is necessary to differentiate between ‘editorial designer’ and ‘visual journalist’ in this dissertation. From the visual production perspective, editorial design consists of layout and other structures of information made by visual designers, while visual journalism deals with a much wider range of visualisation in news websites. Although they both adhere strictly to in-house style guidelines, the current situation (media convergence and multimodality) has required more specialised skills of practitioner departments for creating graphic representations.

Having investigated the visual information structure and the main design principles in news websites, Article 3 (Chapter 6) asks how in-house visual journalists define self-positioning. My hypothesis is that their professionalism affects visual representations when visualisation in news websites is a process of transforming news stories by integrating various modes with their communicative potentials. Because of the changes in journalism brought about by media convergence in newsrooms, it is important to examine the in-house visual journalist’s role. Therefore, this article suggests rethinking the role of visualists in transforming stories in the newsroom by considering multimodal practices in the workflow. Their work lies in the specification of the designer’s profession inside the newsroom and in the identification of the visual journalist’s outputs in a broader social context. Therefore, the article examines the visualist’s role on three levels – the role in a social context, the physical configuration in the newsroom and the practices within the professional culture – by collecting empirical data from the *Helsingin Sanomat* newsroom. The article contributes to the primary objective by presenting the multi-faceted work in the context of team dynamics in visual journalism. The article serves to improve our understanding of multimodality in news websites.

RQ4: How does visual transmediation from print papers to news websites affect professional design practices in newsrooms?

Article 4 (Chapter 7) investigates the communication between visual journalists and reporters in the process of visual transmediation in newsrooms. The multimodality change in design practice resulting from media convergence has brought new requirements and considerations for transforming textural reportage. This has created communication tensions or misunderstandings among journalistic practitioners. This article reveals some of the limitations and possibilities in the visual transmediation from print to digital papers in newsrooms. It examines in-house visual journalists' workflows, mainly in information design, in two Finnish newsrooms. In addition, it explains how organisational communication is maintained within professional design practices. The article contributes to the primary objective by investigating the origins of the communication tensions between the two parties – visual journalists and reporters – to determine the ideal workflow for online journalism. Overall, the link between the previous practices and the complementary ideas brought about by the new media contributes to explaining the strength of communication in visual journalism and the necessity for change. This serves to provide a better understanding of the visual information structure of contemporary news websites.

Together the four articles address the question of visual journalistic professionalism from different theoretical and empirical perspectives. They contribute to answering the main research question of how visual journalistic professionalism is maintained by providing a better understanding of the design principles for online newspapers, the manifestation of a visual information structure, the visual journalists' situation in media convergence, and the communication between textual and visual practitioners in newsrooms. The articles are all grounded in the assumption that visual journalism in the Finnish context is an atypical profession that needs to mobilise both aesthetic and functional values to retain its authority in the public sphere and the marketplace. As such, visual journalistic professionalism remains at the centre of the main research question.

1.3 Overview of methods

This thesis aims at ‘basic qualitative description’ as defined by Sandelowski (2000), using an eclectic but reasonable combination of sampling, data collection, analysis and re-presentation techniques. Although this study borrows concepts from areas such as ethnography and social semiotics, I try to mostly use everyday language to describe my findings and conclusions, instead of ‘in terms of a conceptual, philosophical, or other highly abstract framework or system’ (2000, p. 336). Highly abstracted description may hinder rather than aid my goal of understanding visual journalistic professionalism, especially for those non-academic newspaper designers.

As elaborated in the last section, the overall goal of this research is to explore, describe, and understand design professionalism in visual transmediation. The primary research question of this exploration is then supported by four sub-questions, on design practitioners; their roles in and views on visual representation processes. In this way, information on the methods are illustrated in the individual articles. I use theories from different sources to approach the research topic and I employ mainly qualitative methods to gather data. For a general overview of research methods in this thesis, in order not to leave readers doubting whether they understand fully how the work was done, Figure 2 presents the main methods for this thesis, together with their contribution.

The decision to use multiple research methods stems directly from my academic interests in both journalism and design. Due to the complex nature of newspapers, the act of visual transmediation in online newspapers relates to many things, including a physical change and a mental difference. It can be regarded as an intentional design from a communication design viewpoint as well. This thesis therefore approaches the multifaceted topic from qualitative interviews, fieldwork and analysis. In addition to these, the theoretical basics of perception are described in detail like the interactive functional relationship, physically and psychologically, between visual stimuli and the human organism. Such reconceptualization of visual transmediation do form a supportive theoretical branch of inquiry.

In the published articles, the research methods applied in this thesis are explored further. Chapter 4 firstly introduces certain significant changes in the visual information structure of news and modification in visual journalistic ideology, such as digitised production and distribution technologies. The contextual interconnected arts of visual communication are concerned in

Chapter 5. The mental perceptions of visual transmediation as well as practices related to the production of visual transmediation are approached with in-depth interviews and fieldwork recordings. Their methodology and the specification of visual journalists is discussed in Chapter 6. Furthermore, the complex effects of the organisational cultures on visual journalists' daily routines and practices are taken into account in Chapter 7. Together these different methods provide information which is then used in theory construction.

Theory or method	Contribution
Ethnography research	Helps establish methodological unity while acknowledging the need for further interpretation when examining visual journalists' practices.
Gatekeeping theory	Pinpoints the specification of visual journalists in this thesis, and on whom the research should focus on.
Social semiotics	Provides a basis for looking at the visual signs from a semiotic perspective. Also contributes specific ideas, such as Kress and van Leeuwen's intentional stance which helps to understand visual communication.
Visual perception	Describes in detail, physically and psychologically, on the interactive functional relationship between visual stimuli and the human organism.
Content analysis	Shows what visual journalists actually do and how they differ from each other. Identifies different specification of visual journalists.
In-depth interviews	Provides information and a basis for interpretation about how and why visual representation in online papers look like they do.
Multimodal analysis	Shows what online newspapers actually do and how they differ from printed papers. Also helps identify the specification of visual journalists.
Media convergence	Sets the background on which this thesis is made. Provides a basis for looking at the visual transmediation in both journalism and design.

Figure 2. The main research methods, together with contribution, in this thesis.

1.4 Dissertation structure

This dissertation is structured according to the primary research question on visual journalistic professionalism. This provides the context for the four articles. At the beginning of the dissertation is the theoretical contextualisation of the four articles that compose the dissertation. This consists of three chapters. Chapter 1 (This chapter) introduces the topic area and defines the goals of the dissertation. Chapter 2 (Professionalism Perspectives) provides the theoretical background of the research from professionalism perspectives. The main goal of this chapter is to provide an outline of the study, including but not limited to the current industry environment and the organisational changes resulting from media convergence. Throughout the literature review and in the dissertation overall, special attention is given to the current context of visual journalism. Chapter 3 (Visual Literacy Primer) presents a design primer in the field of visual journalism, including basic values, visual literacy and interactive information graphics. This serves as a basis for understating the professional practices, which adhere to some of the aesthetic conventions, in current media usage. Based on this understanding, existing solutions may be mapped, the complementary stance between multidisciplinary fields may be exposed and potential unknown gaps can be identified. The original publications (Chapter 4 to Chapter 7) are listed in the table of contents. Because all the articles have either been published or are in publication at the time of submission, they have undergone final review and have not been altered except to establish consistency – ensuring they each contain an introduction, a conclusion and a list of references. Finally, Chapter 8 contains the conclusion to the dissertation, followed by a list of references. The references for each publication are marked in the respective articles, while the references in the remainder of the dissertation are listed in the last section.

CHAPTER 2

Professionalism Perspectives

2.1 Introduction

This dissertation is situated within the field of visual journalism – the study of how visual stimulation from various media is merged in journalism. This involves questions related to: (a) the need for a new job description for the combined role of writer, photographer, infographic designer and graphic designer; and (b) the evolution of visual journalism. In sum, this is an investigation of visual journalism in newsroom convergence. The focus is thus on the principles of visual journalistic professionalism, the construction and maintenance of design principles in practice, the workflow and the internal and external significance reflected in the visualisation on news websites. The main research about visual journalist's professionalism are discussed in relation to their contributions to the field, once visual journalism is placed within the proper disciplinary context. The literature review begins with an overview of the issue.

Previous studies on the role of the new technologies in visual journalism have looked at the use of colour, image size, and changes in the tools and processes (cf. Beckman, 1998; Garcia & Stark, 1991; van der Haak, Parks, & Castells, 2012). The trends and routines in visual journalism have been examined from various approaches (Lowrey, 1999). Studies have highlighted the shift in workflow that has been occurring in the field (Zavoina & Reichert, 2000). A review of the literature suggests that the term 'visual journalism' actually has referred to 'photojournalism'. Little research has focused on web news visualisation from the perspective of visual journalists. When visual journalism is regarded as a manufactured product of news organisations, it is ripe for scholarship because of technological development, organisational restructuring and newsroom culture changes that have accompanied the visual changes. It is therefore important for researchers to uncover the opportunities and limitations for design practitioners' workflow for affecting web news visualisation.

Before explaining visual journalistic professionalism in detail, I shall discuss the origin of this study. The backdrop for this dissertation is media convergence. Visual journalism stands at the intersection of media studies and design because it introduces design thinking and creative skills into media and journalism. Therefore, the most important reason for media convergence to be the foundation is that it allows for a broader perspective on the dynamics of media change and resistance in adapting to new environments.

The empirical research on media convergence consists of case studies from several countries, such as Spain (Domingo, Salaverría, & Aguado, 2007),

Austria and Germany (García-Avilés, Kaltenbrunner, & Meier, 2014), the Netherlands (Deuze & Dimoudi, 2002), Norway (Erdal, 2011), Great Britain (Cottle & Ashton, 1999; Wallace, 2013) and the United States (Huang, Rademakers, Fayemiwo, & Dunlap, 2004; Dupagne & Garrison, 2006). The management of convergence has become increasingly important in news organisations across the world. Studies have revealed several important factors in news production – the professional cultures of the various media professions, the attitudes of individual journalists, content formats and production practices (Domingo et al., 2007). The phenomena affecting the daily working conditions under which news is produced include journalistic hierarchies, the question of journalistic ideology and journalist's control over their news stories. The changes in the journalism field have been accelerated partly by radical transformations in the infrastructure, as new media technologies are profoundly affecting how we communicate. In addition, the ways in which information is gathered, shaped and exchanged are changing considerably. The changes in the field have partially necessitated the development of the field of professional visual journalism. There is a dualism in the relationship between new media and visual journalistic professionalism. In this chapter, such a dual perspective requires three primary areas of knowledge: institutional attributes, the cultural competencies in an organisation and the producer's capabilities.

Another issue to be noted before elaborating on the three areas is that because visual journalistic professionalism is the conceptual topic, I have avoided other areas of change in and challenges for journalism that warrant critical inquiry. These include economic issues in the newsroom and even in the whole news industry resulting from social media, political issues such as localisation and globalization, press freedom and media law. This dissertation does not aim to establish a hierarchy of journalism issues. While acknowledging the selectivity of my approach, I argue that media convergence, as a consequence of digitisation and new communication technologies, can be considered a valid framework for examining how the visual journalist's ideology develops and takes shape in the current journalism environment.

2.2 Institutional perspective

At the end of the last century, Dahlgren (1996) built a framework of media logic, following Altheide and Snow, whose most recently published work was in 1991. Because it analyses specific forms and processes within a medium, the framework can be used to analyse how the specific features of cyberspace shape journalistic practices. Though media logic can be used to analyse cyber-journalism formats and their construction of media professionals' competencies and characteristics, it was limited by the technological developments of the time in which it was formulated. With the emergence of media convergence, Deuze (2004) extended Dahlgren's framework to assess the characteristics of a multimedia logic in journalism. Important for media convergence in news organisations are a few related trends. They are summarized as:

- The possibility of producing content that combines multimedia elements, such as texts, images, graphics, audios, videos and interactive graphic elements;
- The potential to distribute content across different media platforms, thereby realising both multi-platform distribution and cross-media production;
- The emergence of new companies or collaboration/coordination between different news departments to develop new business models.

However, the structure of convergent multimedia initiatives has varied among organisations and media. I subscribe to the criticism by Deuze (2004) of the concept of the 'convergence continuum' proposed by Dailey, Demo and Spillman (2003) because convergence does not have to be a linear process (Stone & Bierhoff, 2002; Deuze, 2004; Domingo et al., 2007). Some news organisations may fully embrace convergence with the complete integration of all departments, while others may not have integrated all departments. The degree of convergence varies by country as well.

Media convergence introduces a different discussion regarding computing, communication and content. In visual journalism, it entails the characterisation of multimodality in media content and journalistic practices. This relies on combinations of different kinds of visual representation to be effective. Media convergence in my view is intrinsically a prevailing topic in visual journalists' professional lives and cannot be avoided. The significance of media convergence has motivated this research project.

Digitisation emerged in the newspaper industry in the 1980s (Altheide & Snow, 1991), but in Finland, it began in the 1990s. Considering the distinctive language and the rather small population (about 5.5 million), the Finnish media market is quite concentrated. One of the characteristics of the Finnish newspaper environment is the strong regional and local character (Lehtisaari et al., 2012). Thus, convergence in newspaper production has different meanings at the local and national levels in Finland. In national newsrooms, such as *Helsingin Sanomat*, convergence in visual journalism means building a multichannel newsroom organisation. For them, the quality of the printed newspaper is still one of the most important strategies for the newsroom, along with a well-functioning distribution system (Lehtisaari et al., 2012). The second strategy is building a multi-platform presence for readers. For some regional newspapers, surviving the economic recession has become a major issue. Therefore, collaboration between smaller sized newsrooms is imperative because of the limited journalistic resources and the need for management of the editorial work. For example, 12 regional newspapers in western and northern Finland signed an agreement on Lännen Media collaboration in 2014. The partnership agreement to establish media co-branding, joint ventures and strategic alliances (Davis & Craft, 2000) guarantees content production for the small newsrooms to some extent.

From this perspective, the dilemma faced by newsrooms has been resolved by technological convergence. Technology facilitates the development of media convergence through newsroom collaborations, providing more opportunities for telling news stories². Multimedia content production becomes possible because of the Internet. It makes visual journalists' work more inspiring as well as complex. However, technology should not be seen as the only reason for making changes in journalism; rather, it should be regarded as an accelerator or amplifier by academic researchers and practicing journalists (Deuze, 2004; 2017). This helps to resist the thinking of technology/skills/software as the dominant factor in visual journalism production.

Media convergence has necessitated changes in the ways journalists work. For news organisations, convergence includes the recruitment of new staff (preferably people with information technology skills or sensibilities), more investment in new equipment (hardware and software) and training (including

² Considering the multimodal elements used in communication design in news websites, I use "news story" here. It does not refer to fictional storytelling as news tells facts; rather, I think readability of news has been enhanced enormously by multimodality and platform transformation.

refresher courses). For executives in the newsrooms, new media can present an opportunity for downsizing to cope with the recession and dwindling subscriptions. Ari Kinnari, the leader of the Design Department in Helsingin Sanomat in 2015, thought that they would consider recruiting new staff with multiple capacities, such as people with both coding and design skills. In Lapin Kansa, a regional newsroom in Finnish Lapland area, visual journalists are required to participate in advanced training run by online producers. Newsrooms can thus produce more content with fewer people. One solution is budget cuts.

2.3 Organisational perspective

Although media convergence affects many aspects of news production – technological, regulatory, cultural and management (Frau-Meigs, 2007; van den Bulck & Tambuyzer, 2013) – the main challenges for journalists in dealing with convergence processes are grouped into the following two areas: organisational and professional (Larrondo, Domingo, Erdal, Masip, & van den Bulck, 2016).

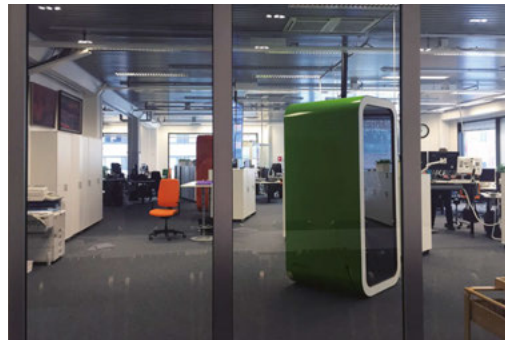
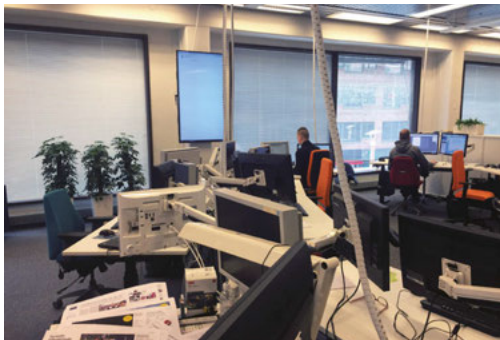
From the perspective of a news organisation, what do the innovations brought about by media convergence in media companies imply? From industry-driven studies like an American Press Institute online report (Silverman, 2015), one can deduce that innovation is distributing news content via new messaging methods that involve software (or apps), changing practitioners' working habits to adapt to user behaviours and launching a new change on an organisational level. Silverman concludes that innovation is 'a combination of process, structure and culture' and it 'is about how your organisation works and moves forward' because key elements of organisational convergence involve: 1) convergence commitment level of management; 2) appointed budget, strategy and timetable; 3) guaranteed opportunities for training and the necessity of new hiring; 4) physical integration or embedding of different news people; and 5) synergy between different departments (Aquino, Bierhoff, Orchard, & Stone, 2002; cited in Deuze, 2004, p. 144).

Visual journalist in this dissertation refers to people who strategically diversify the possibilities of multimodality to create meaning through visualisation – layout designers, information designers, photographers or interactive graphic designers. They work with both text and graphics and are not limited to the role of the photojournalist.

In my fieldwork in the *Lapin Kansa* newsroom, organisational convergence has created greater and better cooperation among the various news departments through the (physical) reconfiguration of the newsroom. In this regional newsroom, there is usually only one visual journalist. In the previous newsroom, the visual journalist's work space was isolated by 'walls' (Figure 3 & 4). Reporters and online producers came to the visual journalist at various times during the workday. Since the move, the news staff are all working in a mostly open space that makes communication easier (Figure 5) even though the total area is smaller – just 2,600 square meters. The newsroom contains several cubes so that employees have the option of being 'isolated' at times, if necessary, to focus (Figure 6). In the open work space, the meeting room or individual work space is in glass cubes. This provides flexibility for the employees. According to the editor-in-chief, Antti Kokkonen, the new system has been satisfactory for most people.



- ↑ Figure 3. Miila Kankaanranta, the visual journalist in *Lapin Kansa* is sitting in her work space in the previous newsroom.
- ↗ Figure 4. The visual journalist's work space was located in a corner and was isolated by 'walls' in the previous newsroom.



30

- ↑ Figure 5. The visual journalist's work position in *Lapin Kansa*'s new newsroom in an open space without any 'wall' between different departments.
- ↗ Figure 6. In *Lapin Kansa*'s new newsroom, the work space is quite open, except when people want to be 'isolated' in the cubes or in the meeting rooms.

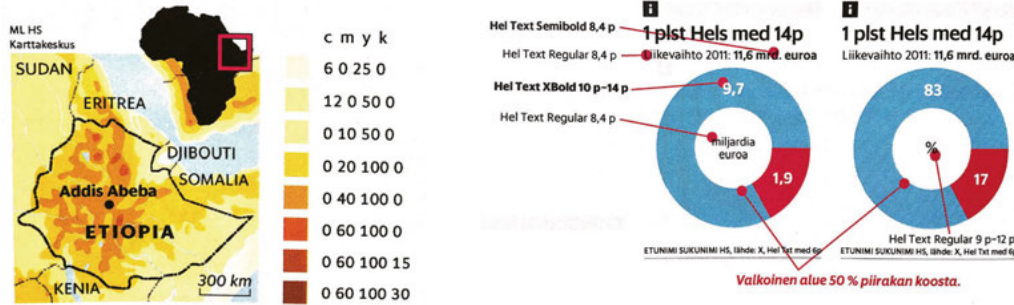
Media convergence inevitably necessitates changes in a news organisation, and change is not always easy. Routinised work (Lowrey, 1999) in graphics comes with limitations on or obstacles to multimedia interventions in innovation processes, signalled by time, news space, structure, staffing, job satisfaction and decision-making in the news organisation. Compared to print newspapers, digital papers create convenience in news presentation, namely efficiency, profitability, usership, improved journalism and user satisfaction (cf. Stone & Bierhoff, 2002). The invention of the organisational stylebook partly resolves the paradox of the visual changes brought about by media convergence. The use of stylebooks in newsrooms has been encouraged for the sake of visual journalists' professionalism. It has been suggested that:

... any newsroom larger than two people have at least a basic design style guide... it will reduce questions of style relating to your design and production, for staff newcomers and old-timers alike, and reduce inconsistencies in the paper. Getting the design basics out of the way will allow your staff to focus on more important issues, like writing better headlines, selecting and cropping better photos, and originating better ideas for illustrations and graphics. (Reason, 2008)

Visual journalists should have a stylebook outlining design principles. It is needed for aesthetic guidelines, even though some critics argue that it constrains creativity. One of the main reasons for stylebooks is to orient visual journalists to the use of colours, fonts, and graphic composition. In the *Helsingin Sanomat* newsroom, the in-house style guidelines are modified at various times for all channels. In other words, stylebooks help to build *Helsingin Sanomat's* visual identity. Though visual journalists may modify the guidelines depending on the specific conditions, the guidelines provide basic style information in most cases. Because of corporate privacy, I cannot publish the whole stylebook used in the *Helsingin Sanomat* newsroom. Instead, I show some examples provided by a graphic producer in the Design Department (Figure 7 & 8).

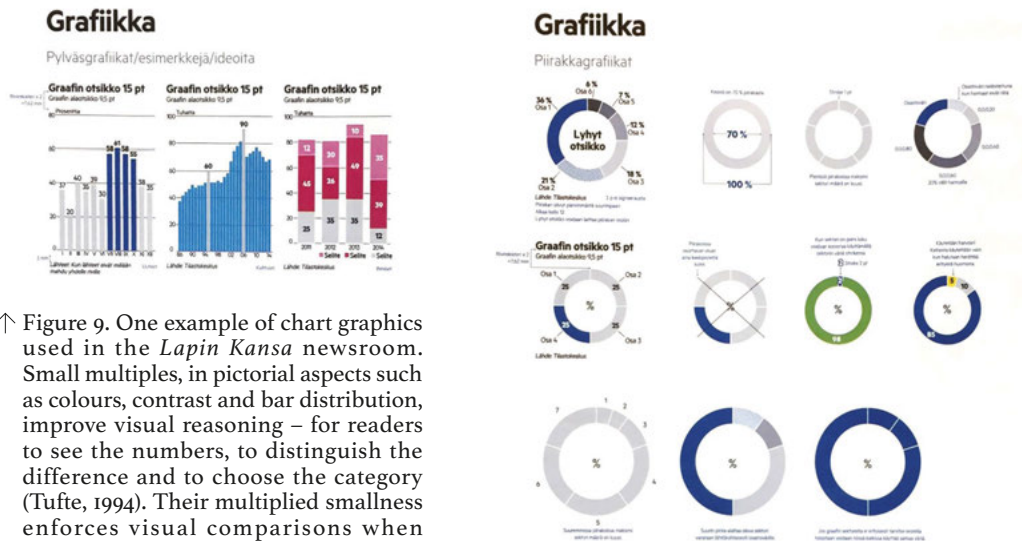
In strategic communications, stylebooks are important for visual consistency in storytelling presentations. Therefore, successful communicative strategies also depend on visual professionals' ability to adapt to a changing communication landscape. The case of the *Lapin Kansa* newsroom is different from that of *Helsingin Sanomat*. *Lapin Kansa* is an affiliate of Finnish media group Alma Media; thus, the stylebook used there was designed by the graphic designers in the *Aamulehti*³ office in Tampere, which offers functional and effective solutions for print and digital media for itself and its partners. The stylebook explains how

to use visuals in the system. It consists of eight sections that cover topics such as grids and newspaper columns, typography, colours, colour usage, political party colours, graphics, maps, locators and timelines (Figure 9–11). The guidelines provide design consistency across the Alma Media Group.



↑ Figure 7. One example of map graphics applied in *Helsingin Sanomat*. Style guidelines version 3.5. The main colour palette and fonts are listed.

↗ Figure 8. One example of chart graphics applied in *Helsingin Sanomat*. Style guidelines version 3.5. Orientation for future use of fonts, font size, colours, numbers, etc.



↑ Figure 9. One example of chart graphics used in the *Lapin Kansa* newsroom. Small multiples, in pictorial aspects such as colours, contrast and bar distribution, improve visual reasoning – for readers to see the numbers, to distinguish the difference and to choose the category (Tufte, 1994). Their multiplied smallness enforces visual comparisons when reading.

→ Figure 10. Examples of pie charts used in the *Lapin Kansa* newsroom. Pie charts provide a good sense of dynamics, comparison and context. Small multiples work similarly in pie charts, while a statistic display can be perceived clearly without large eye movements.

³*Aamulehti* (Finnish for 'morning newspaper') is a Finnish-language daily newspaper published in Tampere, Finland. With 500,000 residents, the Tampere Region is the second largest media market in Finland; thus, *Aamulehti* is the second largest daily newspaper in Finland.

Lokaattori

Kuvat + lokaattorit/grafiikat



↑ Figure 11. Examples of locator graphics used in the *Lapin Kansa* newsroom. This example shows the effectiveness and elegance of “small spots of intense, saturated colour” in classic cartography (Tufte, 1994, p. 63). In other words, the large background area in light grey and blue does its work very quietly, allowing the smaller, bright yellow textboxes to stand out vividly.

For routinized work in news organisations, pre-programmed templates and formats have been criticised for making visual practitioners ‘slaves’ to a relatively limited range of options. For in-house layout designers in *Helsingin Sanomat*, there is an increasing dependence on CCI Layout Champ, a desktop publishing program. It allows reporters, editors, layout designers and graphic designers to work on content at the same time. Doris was a similar program used in the *Lapin Kansa* newsroom. This program allows editing access to text, graphics and archives during the layout process in the newsroom. It was used mainly for print paper publishing. As of the beginning of May 2017, the Doris software was replaced by News Pilot by the Alma Media⁴ newspapers. Technological convergence therefore facilitates information sharing through computerisation and digitisation, while organisational convergence formalises ways of thinking across media in a news organisation.

2.4 Producer perspective

The distinction I draw between visual journalists and photojournalists depends on materiality and the senses (Bateman, Wildfeuer, & Hiippala, 2017) in the digital medium because of differences between the multimodal properties of information designs and the perceptual qualities conveyed by photographs. Researchers have focused on the multimodal studies of social semiotic analysis (Kress & van Leeuwen, 2006; Adami, 2014; Kennedy, Hill, Aiello, & Allen, 2016; Bateman et al., 2017) that add a competence dimension to discussions on information visualisation in media convergence. In photojournalism, some studies have examined photojournalists’ workflow in the visual journalism field and the technical and aesthetic use of news photographs in the context of the new media (Zavoina & Reichert, 2000; Mortensen & Keshelashvili, 2013). Other studies have assessed the quality of photojournalism, given that the field has been affected by amateur photography on social media (Näsi, 2015; Schmieder, 2016).

In practice, however, there seem to be gaps between multimodal designs and multimedia convergence, especially given the firmly entrenched and well-established rules and principles within newsrooms. One could argue the

⁴ Alma Media is a media company focused on digital services and publishing. In addition to offering news services, the company provides information related to lifestyle, career and business development through its products. Alma Media has expanded from Finland and now provides services to the Nordic countries, the Baltics and Central Europe. By 2017, Alma Media acquired about 20 newspapers around the country. *Aamulehti*, *Lapin Kansa*, *Satakunnan Kansa*, *Kauppalähti*, *Pohjolan Sanomat*, *Kainuun Sanomat* and *Iltalehti* are its biggest newspapers.

relevance of acquiring both technological skills and conceptual thinking for working in a new media environment during visual transmediation. In this dissertation, I posit that this holds true in the discussion of information visual designs from the producer's perspective in the current media environment.

The most significant part of multimedia logic (Deuze, 2004) is to signify its fundamental effects on professional journalists' sense of self. The changes and new requirements necessitated by the new media have created a new cadre of journalists who are supposed to possess polycentric and integrated skills (Abraham, 2001). This does not mean that some widely known design principles are outdated; rather, technology provides the opportunity to refashion an integrated and intellectual approach that situates visual communication in journalism. The visual journalist, with a multimedia approach to journalism production, can be seen as a confident professional worker – an individual working on small projects as well as a team member in a collective where the multidisciplinary elements work together on larger projects.

What visual journalists may (or may not) practise can be projected from the practitioners' routinized work in current newsrooms and the literature on the changes brought about by media convergence. One way to uncover a visual journalist's professionalism is to explore information visualisation, a production by visual journalists, as a possible meeting point for visual journalism studies and media convergence in news organisations. It should be operationalised to analyse how emerging sociocultural and social semiotic issues can transform the conceptualisation and practice of visual journalism.

In 2012, *The New York Times* published the longform story⁵ “Snowfall: The Avalanche at Tunnel Creek”. For many readers, this was their first time seeing such a complete interactive news story. For *The New York Times* newsroom, this was their solution for engaging readers in digital longform journalism – using multiple elements and platforms to tell the story (Kovacs, 2016). This required taking advantage of multimedia tools, including audio elements embedded in text, video clips intertwined with the story, animated maps, auto play and interactive graphics. Although ‘Snowfall’ was more like an experiment in visual journalism, such visual elements were key to keeping readers engaged in the news story; furthermore, it provided interactivity for readers in this innovative longform storytelling.

⁵The concept of ‘longform’ online content has existed for years, and newspapers and magazines have been doing longform online journalism for decades. Just doing the visual presentation long does not make the storytelling better. Now, using new tools – graphics, video and data – to elevate the quality of stories is what a newsroom shall do. For more discussion of “longform”, see for example, <https://www.brookings.edu/blog/brookings-now/2014/04/30/what-is-longform-and-where-is-it-going/>.

The popularity of the ‘Snowfall’ storytelling with readers and the awards it earned from the industry (Jacobson, Marino & Gutsche, Jr., 2016) draw attention to one of the biggest challenges facing journalism in the 21st century (Bardoel & Deuze, 2001) – combining newsgathering and storytelling techniques in all formats, and creating synergies among co-workers with different skills in a team-based project. The case has championed the shift from individualistic production journalism to collaborative multimedia journalism. As shown in the afore-mentioned organisational attributes in newsrooms, one of the main issues in media convergence in news organisations is the ways in which practitioners in distinctly different departments – print and digital, offline and online – perceive one another and establish cross-disciplinary understandings so that the collaboration goes smoothly. Therefore, the current workflow creates particular tensions in the newsrooms and among journalists, and it challenges the traditional ways of practising journalism.

One of the reasons for such synergies among different departments is to need to publish more news with fewer journalistic resources, including reporters. In the initial phase of media convergence, managers saw these dramatic changes in the organisations as an opportunity to reduce the role of reporters in the daily planning of news production. For fast production with fewer resources, multi-skilled reporters were needed more than ever. They could be shared among different news projects and across multiple media platforms whenever needed (García Avilés & Carvajal, 2008; Larrondo et al., 2016). But in recent years, many newsrooms have also seen a move in a different direction because the spread of multiskilling in combination with the reduction in the workforce can add to the stresses faced by journalists and, ultimately, affect the quality of the output (Wallace, 2013). With media convergence becoming more widespread around the world, a new requirement has been created for journalistic professionalism. It is explicitly stated that this does not mean that managers think that journalists should focus on their specialties exclusively; they should be able to understand the differences in other fields and the contributions of cross-disciplinarity when crafting their own content. This is the basic understanding of team-based collaboration in an era of media convergence, even though the collaboration referred to in this dissertation may be that in the newsroom rather than among different media organisations.

Media convergence between tradition and change (Mitchelstein & Boczkowski, 2009) is evident at another level. Multi-skilling for news production is not an option, but an expectation. The re-enactment of established working forms has engendered questions about the journalists’ professional identity.

That is, the shifts in practice have led largely to questions about the implications for the personal identities of journalists. The routinized work in newsrooms suggests, to some extent, that as visual journalists incorporate the newsroom culture and branding strategy into their visual practices (as a result of the newsroom stylebook), they may feel as though they are sacrificing the ability to maintain their creativity. On the other hand, there is no signal of sympathy from readers for visual journalists' loss of personal identity, especially for those who create information graphics. Newspaper visualisation is regarded as a means for enhancing the corporate brand image through visual elements.

The visual journalist's work identity is redefined in collaboration and co-work in the newsroom because a professional identity is developed to interface with co-workers on the job (Holton & Molyneux, 2017). By sharing a professional identity with co-workers, a distinct personality and personal characteristics are formed in the newsroom. Therefore, it seems reasonable to acknowledge the relevance of the visual journalist's professional identity and the synergy among different departments in the newsroom. Professional identity is determined by various factors. This explains why we need to take a closer look at the cultural competencies of newsrooms.

2.5 Summary

Responding to the changing nature of the current media environment, this chapter sketches a general picture of visual journalism, created by media convergence, from three perspectives – institutional, organisational and producer. In this dissertation, media convergence allows us to identify major differences in the tension shaping the media environment for visual journalists in the industry. Although the concept of media convergence is the driver of visual journalism, it is more than simply a technological shift. As Jenkins (2004) proposed, convergence alters the relationships among existing technologies, industries, markets, genres and audiences. In other words, much of the research on media convergence in this dissertation is concerned with the question of how visual journalism achieves professional status and how it maintains its ensuing power and authority in society. Such a review about media convergence lends credibility to the ongoing professionalism process and the development of a shared occupational ideology for visual journalists in the media environment.

In this chapter, I have shown how revisiting the concept of media convergence can add value to a more comprehensive theorising of visual journalism – what it is or what it could be. The focus is primarily on three

implications (institutional, organisational and producer) of these shifts, but we should also pay attention to the aesthetic implications. The key has been to make explicit what has been implicit in the literature and has been bound by the operationalisation of the values of a visual journalistic ideology. The significance of this section also lies in the rejection of about the conception of visual journalism as a craft in news representation, especially in analyses of the effects of the emerging sociocultural and social semiotic issues in visual journalism. These insights in the chapter can be helpful to the practice and the academic discipline of visual journalism.

CHAPTER 3

Visual Literacy Primer

3.1 Introduction

'Why,' said the Dodo, 'the best way to explain it is to do it.'

Lewis Carroll, *Alice in Wonderland*

To explain the role of the visual journalist in the production of news, the articles in this dissertation employ theoretical perspectives from media convergence, social semiotics and news sociology for a general picture of visual production in today's media landscape. These perspectives will not be repeated here. Instead, this chapter will discuss, from a practical perspective, how the theoretical assumption underlying the work as a whole – the changing media environment – serves as an explanatory framework for understanding the toolbox influencing visual journalists' professionalism.

Therefore, this chapter mainly serves for a description of various visual tools. Different visual elements are discussed, such as dot, line, shape, direction, tone, colour, texture, scale, dimension and motion as well as forming agents like contrast, balance and other existing potentials for dynamic visual representation. It is worthy to discuss reliability and validity in theories when making this thesis, as the criteria for conducting and assessing the changes and effects on visual transmediation in online newspapers remain in the ongoing practices. Considering digitised production is frequently mobilised to serve the function of multimedia delivery nowadays, I believe it is even worthier to talk about the practitioner's toolkit during visual reproduction. From the fieldwork, fairly neutral and accurate design knowledge can be addressed. To take one step further, I try to dig deeper into the changes in crafting visual transmediation compared to the rules applied in print papers, rather than a generic accumulation of elements of visual language.

This is in line with Franchi's (2013, p. 187) notions of design professionals, which mentions that design professionals now have a broad cultural background, communicative linguistic skills and fundamental professional ethics. In-house visual journalists are hired not just for their knowledge of the media landscape but also for their visual production skills. This is how we recognize their position and their work. By opening the visual journalist's toolbox, this chapter aggregates some rules and principles to create a visual literacy primer for crafting graphic presentations. I will first define the term 'visual journalist' as it pertains to this dissertation. Gitner used the term 'image maker' (2016, p. 10) to define visual practitioners as he considered photography to be a dominant mode in visual storytelling. Although photography is ubiquitous

in visual journalism, it is beyond the scope of this discussion. It is considered a narrative element that exists within the visual information structure. The main research goal of this dissertation is to analyse the graphic presentations in news websites. Accordingly, I would define the practitioners as ‘visual journalists’ because they are strategically creating visualisations through news platforms, and, most important, they are making visual productions with journalistic values. Visual journalists are creating graphic presentations and composing visualisations in news websites for the purpose of reportage.

An analysis of the building blocks of visual information production in news websites prepares the ground for a discussion on how visual journalists’ work has changed: for example, how visual journalists combine visual compositions logically and aesthetically for a visual representation on a web platform. When looking at newspaper spreads, print or digital, we see visual information in the form of graphics, photographs, charts, pies, maps, videos and audio. Readers and the newspaper engage in a visual conversation by conveying and receiving sources of information or they participate in a deeper narrative by creating and understanding meanings (Brusila, 2015). In other words, the visuals are an information source.

To understand visual representation in news websites, it is important to be aware that informational sources have basic properties, such as forms, colours and meanings. Visual designers express these values basically through some classic design principles that have been developed over centuries. Each ‘tool’ has a specific purpose, e.g., what the golden ratio does in the space as compared to an ambiguously organised layout. Meanwhile, some important characteristics have emerged with the development of digital platforms. ‘Tools’ vary greatly in sophistication, such as multiplatform delivery versus a singular communicative channel. They come in different varieties and levels of forms. The point here is not to compare these tools, as they constitute both bottom-up factors (such as form, colour, contrast and motion) and top-down factors (such as interests, prior knowledge, experiences, individual preferences and cultural differences) (Boeriis & Holsanova, 2012). These options all constitute the visual journalist’s toolbox. The aim here is primarily: 1) to discuss how basic values and classic visual literacy are helpful within the context of visual journalists’ practices; and 2) to introduce the visual elements in multimedia storytelling that have amplified the practitioner’s skills.

Last, it is essential to realise that this chapter is neither a guideline for future visual journalists nor an exercise book about crafting visual informational sources on news websites. Having acknowledged the important rules and values

for casting informational visual sources in a structure, we understand how visual journalists tell news stories with consistency by a visual and creative act, rather than by arbitrarily organised visuals. The discussion here is within the context of the relevant graphic skills and visual thinking needed for designing visual information structures in a coherent visual language. It also considers the key characteristics of this creative process as important to the visual journalist's professionalism. The ongoing professionalization and corresponding development of this field have created some consensus around effective design values and principles, as I will show hereafter.

3.2 The basic values

The designer does not approach each design problem anew with a clean plate, as is implied by the considerable literature on design principles. Designers usually have their own motivations or reasons for design projects. There are also 'inherited' sets of beliefs, values and attitudes from previous designs, masterpieces and artists. For example, the golden ratio has been regarded as a 'standard' for proportion, and it is widely used in architectural measurements as well as layout designs, so that the proportions are calculated with consistency (Harris, 2007).

For some designers, this collection of beliefs, values and attitudes is confusing or ill-informed; for others, it is more clearly structured, and for yet other designers, it comprises the basic elements for a theory of design. Ultimately, there has emerged a tradition of sharing these ideas through books, articles or lectures to make them accessible to future designers. In the process of designing a visual information structure, I believe that some ideas can be considered a set of 'guiding principles' as well. This collection of principles will be increasingly emphasised, given that many people are technology-centric and disregard their instructive impact on the design process. This chapter provides an overview of the basic values for constructing visual information structures on news websites and will discuss five cues – colour, form, depth, movement and layout. A focus has been on the growth of and changes to the collection of basic design principles as a result of technological development. It is not surprising that visual journalists use these values singly in modified forms and in combinations in designs – print or digital – to convey information visually.

3.2.1 Colour scheme

Colour, an extremely important tool in design, is very effective for conveying differentiation (Baer & Vacarra, 2008). Scientists have discussed the temperature of a specific colour by its wavelength on the spectrum. Specific measurable attributes determine the properties of colours, but this may omit the informational and semiotic qualities that colours often evoke in communication. Although colours usually engender emotional or physiological responses, we often forget that this fundamental tool has capabilities for coding and differentiating. With consideration for institutional and organisational perspectives, visual journalists prefer rational and logical ‘ensembles’ of visual communicative elements, rather than emotional colours with conventional meanings.

The fundamental function of differentiation by colour depends on its salience as ‘salience can create a hierarchy of importance among the elements, selecting some as more important, worthier of attention than others’ (Kress & van Leeuwen, 2006, p. 201). This will be discussed further in the following section. Regarding visual information structure, I will focus on colour schemes instead of individual colours because colour schemes serve to produce salience in the whole, to situate the meaningful elements and to provide coherence and order.

We learn to identify the general hue of colours by comparing a specific colour to the other colours in a composition. In the identification process, it is essential to judge the difference between colour schemes for daily use and colour schemes for branding. In the *Helsingin Sanomat* visual guidelines, this rule is stressed with bold and italic fonts. What does this mean for visual journalists? Three examples of colour schemes from the Finnish news websites – *Helsingin Sanomat*, *Aamulehti* and *Iltalehti*⁶ – were captured (Figure 12–14). Conclusions could be drawn from the colour scheme in the layout of the news websites. The layout is usually determined by the corporate branding; furthermore, there is evidence of cooperation within the media group. For example, *Aamulehti*, *Satakunnan Kansa*⁷ and *Lapin Kansa* have a similar colour scheme as they are owned by the same corporation – Alma Media. At the same time, the colour scheme for daily use in information designs (Figure 15) is usually different from that used for branding. It is more vivid, with more colour contrast and hues.

⁶ *Iltalehti* (Finnish for “evening newspaper”) is a tabloid newspaper published in Helsinki, Finland. Alma Media is the owner of this paper, and *Aamulehti* is one of its sister newspapers.

⁷ *Satakunnan Kansa* is a Finnish-language regional newspaper published in Pori, Finland.

In addition, this colour scheme allows for some colours for special use. This guarantees more choices depending on the context, so that the colour scheme allows for more meanings and perspectives in visual compositions.

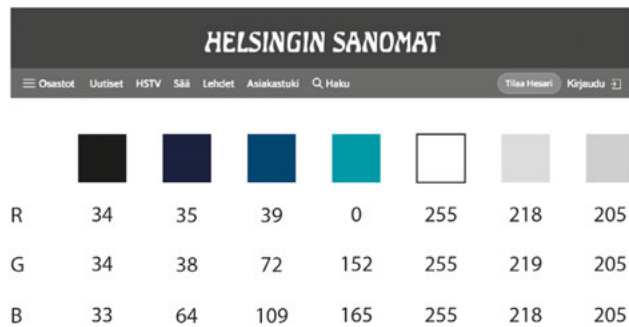


Figure 12. This colour scheme is in the layout on the *Helsingin Sanomat* website. The first colour (RGB: 34,34,33) is for news texts, while white (RGB: 255,255,255) is used for differentiating elements against the background colour (RGB: 218,219,218). The blues (RGB: 35,38,64 and RGB: 39,72,109) come from the *Helsingin Sanomat* visual identity and are used mainly in branding and section names. Turquoise (RGB: 0,152,165) is attractive; it creates salience for category names.



Figure 13. This colour scheme is in the layout of the *Aamulehti* website. The dark blue (RGB: 38,85,145) comes from the Alma Media Group's visual identity, and it is shared with other entities within the corporation (e.g. *Lapin Kansa*). This colour is used in the newspaper's branding visualisation as well as to attract attention to titles and sections as a background colour. The light blue (RGB: 37,166,220) is used mainly as a background colour for commercial cooperation (in Finnish, 'kaupallinen yhteistyö') with the similar aim of attracting attention.



Figure 14. This colour scheme is in the layout of the *Ilta-alehti* website. Red colours (RGB: 199,52,66 and RGB: 198,47,56) are used mainly in big titles as textual colour and in section names as a background colour. The slightly lighter red comes from the brand visual identity. Bright yellow is so attractive in the visualisation that it is used as a background colour for breaking or real-time news.



Figure 15. This colour scheme in the *Lapin Kansa* stylebook is for daily use. Different colour palettes are used for different types of usage, some of which are for getting attention (in Finnish, 'huomiovärit') and others for emphasizing different aspects of the content (in Finnish, 'osastot').

3.2.2 Visual form

As is the case with colour, forms also convey specific meanings for viewers based on their experiences and cultures. Visual journalists need to be aware of the messages being conveyed by form and choose appropriate forms of expression. 'Form' does not refer to basic geometric forms like circles, triangles, squares or free forms. Rather, visual form is defined here as visual composition which embodies basic visual elements to convey information.

For a general idea of the visual forms in the Graphic Section, Figure 16 provides some examples from the in-house visual journalists at *Helsingin Sanomat*. The examples are from the infographic design archives in the newsroom. There has been a long tradition of cutting and pasting in the design pieces published every day. Through observing visualisation in the newsrooms, we have seen the use of various forms, such as illustrations, locators and infographics like bar charts and pie charts. Besides, there are also great possibilities for interactive graphics. I will discuss this later.

Each form has its own specific characteristics for conveying information, but the use of multiple rather than single forms has become commonplace. The manifestation in the visualisation shows the use of the same material expressions but different modalities (Hoogslag, 2014). The images in Figure

17 were created from invoking the locator and infographics. This is necessary for determining the semiotic modes that are being mobilised in the media. Meanwhile, the combination of photograph and infographics in Figure 18 provides an interpretation that the chart refers to the background photograph while simultaneously indicating a relevance that extends across the photograph in the composite visual. Such a marriage of multiple forms usually suggests an interesting graphic combination with several meanings. The lesson here is that different visual forms exploit informational sources to different degrees. This explains the prevalence of the practice that assigns different visual forms to specific news story projects. For the most part, this holds true for the creative work of in-house visual journalists. Therefore, increasing the capacity to use visual forms to construct a visual information structure is essential.



Figure 16. Visual cases from the Graphic Section in the *Helsingin Sanomat* newsroom. ‘Excellence in statistical graphics consists of complex ideas communicated with clarity, precision, and efficiency’ (Tuft, 2001, p. 13). For information designers working in newsrooms, their visual productions should: show the data as correctly and precisely as possible; induce readers to think about the substance rather than the graphics skills; present many numbers in a small space; make large datasets coherent; provide description or facilitate exploration; and be closely integrated with the statistical and verbal descriptions of a data set. The stylebook gives visual hints regarding the colour palette, graphic forms and other relative aspects for the sake of efficiency and coherence in styles.

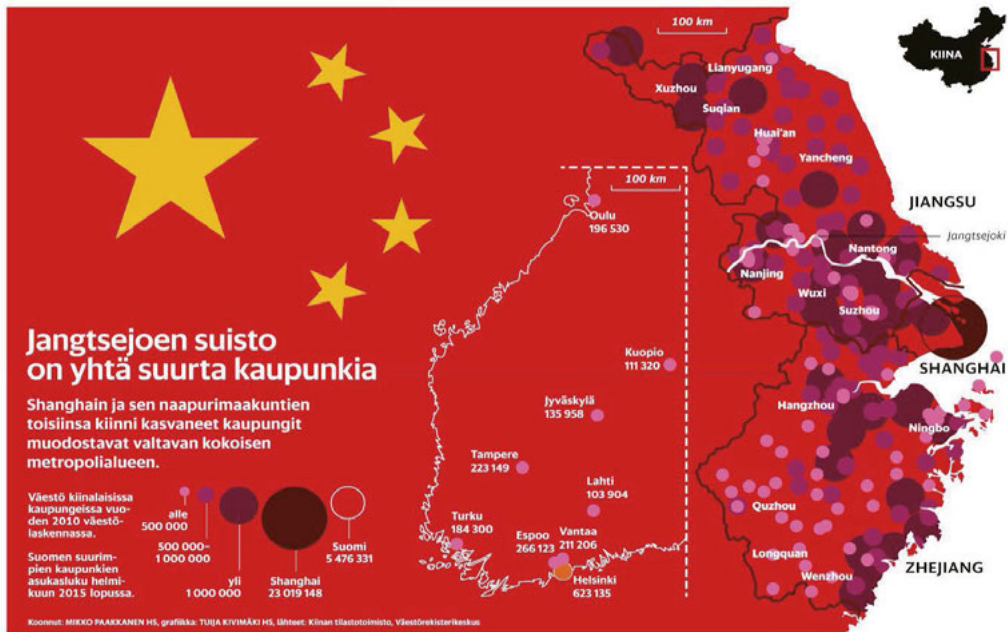


Figure 17. Visual case from Graphic Section in *Helsingin Sanomat* newsroom. Graphics: Tuija Kivimäki.



Figure 18. Visual case from Graphic Section in *Lapin Kansa* newsroom. Graphics: Miila Kankaanranta.

3.2.3 Depth

Depth is probably slightly more difficult to understand than colour and form. Given that visual information structure is an illusion of three-dimensional depth within a two-dimensional substrate (a computer screen), it is necessary for visual journalists to study how depth is conveyed, especially in an environment of 3D images, motion pictures and virtual reality.

There are some factors that add a sense of depth to visualisations in news websites: space, sequence, time, size and perspective. Space relates to sequence, which refers to the ordering of webpages and objects within a framework. When viewers feel comfortable with a sense of expansiveness, there is a feeling of great depth in the visual information structure. Chapter 6 will explain this issue in greater detail.

We can understand the factor time in two ways. Time allows more opportunities for readers to engage with the news stories regardless of the environment, i.e., the archiving function suggests a more adequate understanding of representation and communication. A viewer probably spends more time on a specific visual if he or she is attracted by a graphic element. In this sense, the visual becomes more salient than others. Size as a factor related to depth depends on visual journalists' knowledge of salience. Pictures for feature stories usually have better placement than the thumbnail images in sidebars. With the application of multimodal elements in visualisation, it is possible to get higher quality and larger photographs by hovering over or clicking on the image with a mouse. This not only helps to emphasise the importance of the image, but it also facilitates increased interaction and engagement between the news websites and readers.

Finally, the most complicated depth factor is perspective because it is dependent on the cultures of both the viewer and the visual journalist. Hoogslag (2014) thought readers have a more active and involved position, which allows different roles from player, to distributor, to activated instrument used to complete the online editorial illustration's narrative. In this case, there needs to establish a relationship with something outside its frame and using verifiable markers to understand the online piece. Especially in data driven illustration, real-time illustrated works refer to more meanings and engagement than those only relying on the explicit presence of a written or oral text. Such visual works are determined by how visual journalists decide the major forms, colours and other visual cues through the use of streaming data and empathetic image elements. Different visual compositions then lead to various depths of

meanings from the layering of the different visual elements. Whether readers can successfully receive this perspective depends on their own cultures. A social conceptual perspective helps to identify the important subject of the ideas conveyed by the visuals. Thus, people with a similar cultural background can understand what a message conveys, while others from different cultures may miss it.

3.2.4 Movement

Movement is important to visual journalists as a way to attract attention and to tell news stories, given that the visual information structure can create an impact. Movement is far broader than just actual physical movement in space. It implies graphic movement in a more dynamic medium. As mentioned above, in a news website, there are more opportunities for expanding space. Graphic movement either leads readers' eyes to travel throughout a locomotion or causes readers to ignore the graphic elements within the frame. Thus, visual journalists guarantee the placement of visual and textual elements to maximise their representations and the meaning of the story. Besides, there is some implied movement in visuals. For example, a careful combination of colours or motion elements in a design can have internal meaning. This will be expanded upon in Chapter 5. This kind of movement usually depends on the interaction between the news stories and the readers.

Some researchers have used eye-tracking methods to determine 'the allocation of visual attention in terms of which elements are attended to, for how long, in what order and how carefully' (Holsanova, 2012, p. 253; Bucher & Niemann, 2012). I do not discuss movement from the perspectives of the hardware or the software because eye-tracking software cannot tell us why viewers are attracted to certain stimuli. Graphic movement has been linked to the cognitive processing of visual inputs. The notion of visual perception has been discussed in the context of the 'reading paths' likely taken by the viewer when engaging with some situation or artefact (van Leeuwen, 2005; Bateman, 2008; Hiippala, 2012). Therefore, knowing the content that interests viewers and the places they prefer to see it, the length of time they want to have access to it and the circumstances under which they want to view it is valuable for visual journalists who have a decisive role in news storytelling. Exploring and guiding visual perception by deconstructing the movement in the visual information structure seem to be a part of visual journalists' professionalism.

News websites start with the content, and editors usually pay more attention to the story itself, but most news websites struggle to generate page views. The revenue and content recirculation perspective that requires designing a clutter-free online environment is a challenging shift for publishers. What we have witnessed in the approach to design on news websites recently is an emphasis on efficiency (e.g., ad scrollers) and user-centric browsing (e.g., digital photo albums). The goal is to create a user-friendly context – curation. Here are some examples of graphic movement used in news websites.

Scroll. The photos move in sequence with the user's natural clicking behaviour.



Flip. The picture unit contains different slides that are each revealed in sequence using a flip effect.



3.2.5 Layout

When we are thinking about the visual information structure of a news website as a whole, it is appropriate to include layout space as a valuable dimension within the framework. We are led to consider this *system* with respect to the elements that are selected, the ways they get varied within the context and the consequences of such variation. This is the reason that we need to understand the individual category against the general background – the ‘map’ of the territory. The story becomes complex within the context of its materiality.

Because of the opportunity to extend the available layout space, the screen is not bound by the physical limitations of the space available on a sheet of paper. This means that informational sources are organised with the help of an interface (Bateman et al., 2017).

For interface production and design, we are particularly inspired by the concepts of time and space that expand the layout space in greater detail. Thus, interface production and design include extensive connections with informational communication, despite being centred specifically on typography and design. It is one of the important aspects of information that cannot be unreasonably restricted in the discussion (Bateman, Delin, & Henschel, 2007). The layout structure involves the nature, appearance and position, as well as the hierarchical inter-relationships of the communicative elements on the page. Chapter 4 will discuss this issue further.

There is general agreement that through technological change, viewers are experiencing a very major shift in the number of available information sources and communication methods. From the perspective of visual journalists, graphic literacy in digital genres is needed to produce, to deliver and to store information (Waller, 2012). In newsrooms, the practices surrounding the design of layout structures are confined within the specific organisational culture and journalistic workflow. For efficiency in visual production, it is common to use a layout template. Figures 19–21 provide examples of layout templates (print versions) from the *Lapin Kansa* newsroom. The biggest advantage of a layout template is that it facilitates the visual journalist's work in association with other co-workers in the newsroom. Such a template helps current Finnish newsrooms to execute a 'digital-first' policy.

Experience shows that new communication technologies rarely make old ones become completely extinct. Visual journalists have created a new niche because of convergence in the newsroom, but creating visual presentations amplifies their strengths on multiple platforms. In this dissertation, online newspapers are different from the electronic version of print papers, as the latter generally correspond to the print version in most respects (texts, visuals, layout, etc.). The online version puts more emphasis on other aspects, such as clear navigational menus, short summaries of the news stories, general navigation for thematic sections and diverse reader experiences with media. The online versions are linked to the content in the off-line papers but are quite different in the presentation of the information. The methods of layout design are amplified. Therefore, news websites provide a more straightforward, structural and interactive organisation for web use.

3000+600+PK+VK



Figure 19. Layout template example 1 from the Graphic Section in the *Lapin Kansa* newsroom. Numbers mean the amount of characters in different article parts. Here 3000 is for the main article and 600 for the fact box. VK means horizontal picture frame (in Finnish, 'vaakakuva') and PK is for vertical picture frame (in Finnish, 'pystykuva').

3000+600+VK+VK+VK



Figure 20. Layout template example 2 from the Graphic Section in the *Lapin Kansa* newsroom. It allows 3000 characters for the main article and 600 characters for the fact box.

3000+800+1100+PK+VK+VK



Figure 21. Layout template example 3 from the Graphic Section in the *Lapin Kansa* newsroom. It allows 3000 characters for the main article, 800 characters for the fact box and 1100 characters for "the smaller article next to main" (in Finnish, 'kainalojuttu').

3.3 Theories of visual literacy

This section focuses on three aspects of visual literacy theories as a conceptual bridge. They link the ways visual news is produced (Gestalt) with the ways readers create meaning out of visual news (semiotics) and the ways readers process visual news (cognition). The previous section discussed the basic values and principles in the production of visual news from the perspective of visual journalists. Without the conceptual bridge discussed in this section, the recommendations of empirical studies may founder outside the meaningful context of the newsroom. While the following theories highlight the ways in which visual news creates meaning, visual journalists learn to connect practices with visual perception. The review of the literature in this section is not comprehensive; rather, it is intended to highlight representative studies from the viewer perspective.

3.3.1 Gestalt

Designers use the perceptual principles established by Gestalt psychologists (cf. Wertheimer, 1938) to explain visual elements. Especially in the field of layout design, Gestalt is widely used to conceptualise the graphic relationships among the elements of a page (cf. Bateman, 2008; Waller, 2012; Bateman et al., 2017), following the basic principle that *the whole is greater than the sum of its parts*. Putting Gestalt principles into practice creates unity within a design piece. In other words, a picture carries a different and altogether greater meaning than its individual visual components.

The newspaper front page is often a topic in research and design practice (cf. Gustafson & Kenix, 2016) as it usually contains the most visual elements, such as headlines, subheads, body stories, pictures, captions, cutlines and various graphic elements, in either a print or a digital format. The elements work together for a dramatic effect. Therefore, it has become the rule that graphic designers put ‘everything’ on the front page so that viewers may get the most meaning at first glance. Nevertheless, there must be some rules governing practices. For this reason, the newspaper has a consistent visual language: headlines usually are designed with the same typeface, colour and size; similar genres are usually collected in the same column; and the pictures on the page are designed all in colour or all in black and white. In sum, a newspaper through its specific style has a greater impact as a complete entity than any individual parts that make up the whole.

Psychologists see our attempts to establish order as an innate faculty and have concluded that certain ‘laws’, as intentional ideas in accordance with perception, are always organised (Pettersson, 2002; 2017). We visually and psychologically attempt to make order out of chaos, to create harmony and consistency from seemingly disconnected bits of information. We may also observe that these principles are indeed likely to contribute considerably to the ability to separate the structure into meaningful units during visual perception.

From the perspective of a designer, Gestalt helps to influence the viewer by controlling how the design is viewed. Therefore, when building the structure of informational sources, visual journalists are becoming more adept at comprehending the parts to realising the whole rather than merely focusing on the parts. Among these Gestalt laws, several principles are most commonly recognised as helping visual journalists to understand how viewers respond to various graphic elements: figure-ground, proximity, similarity and continuity.

The visual information structure and Gestalt studies

In light of the discussion above, it would be reasonable to assume that the four Gestalt principles would gain considerable attention in the construction of visual information structures in three respects:

- Prioritising a specific idea or an element among a unit of possible directions for reading. Viewers will be attracted by the focus of a visual representation that uses different informational sources.
- Centring an idea by locating the visually disruptive elements during reading. Typical changes in the visual rhythm will be highlighted.
- Connecting several concepts by carefully ordering the informational sources to avoid unnecessary contours in between meanings.

In the following, I elaborate the above-mentioned Gestalt principle with regard to the visual information structure in the respective field.

It has been said that the ‘figure and ground’ principle is one of the simplest rules for conceiving perceptual organisations (Pettersson, 2002). It shows our perceptual tendency to separate the figure from its background based on one or more variables, such as colour, size and contrast. In a simple composition, discerning the differentiation is easy, but in a complex composition, there will be a distraction. In the unit of the page, figure-ground refers to the relationship between an object and its surroundings. In the visual information structure, the

relationship may be unstable because viewers can make their own decisions to focus on the figure that attracts them the most and to relegate the rest of the image to the background.

The Gestalt law of proximity states that 'objects or shapes that are close to one another appear to form groups'. Thus, we group objects and elements according to their physical proximity to one another. It is easily understood that a cutline below an image explains the image. The proximity of the text and picture makes the connection obvious to readers. The eye tends to be attracted to groups or clusters that make up the 'heavy' portion of a page.

The principle of similarity states that we tend to have the impression that items that look similar are members of the same category. The values or characteristics may encompass colour, pattern, shape, size, texture and orientation that suggest the figures are similar and belong together. Grouping similar figures in a good composition creates a continuous contour. Viewers can recognise the similarities among the figures as well as the differentiation among the visual messages. Most significant is that there exists a *context* in which the internal visual message is presented by the unit of similar visual representations. It is not obvious when viewers are reading a multi-image slideshow in screen. Visual journalists usually group photographs with the same topic but from different narrative angles. It leads viewers to be attracted to the photo album at a glance.

According to the continuity law, viewers naturally follow a line of objects and then perceive a smooth continuation. This principle works well, especially in a context where visual elements belong together. This not only exists in visual units but between webpages as well. The visual representations that have a straight and natural relationship with one another easily give the impression of being continuous and unbroken. The stronger the relationship between genres in the structure, the better the communication between the website and the viewer.

3.3.2 Semiotics

Semiotics is the study of sign processes, signs and symbols, or signification and communication. As a literary theory, semiotics has increasingly gained ground in academia. In addition to conveying meanings and denoting signification, semiotic analysis investigates the internal meaning, to narratively underlay the story structure and to posit the notion of levels of meaning as a discovery method (Martin & Ringham, 2000, p. 7–8). In the field of visual communication,

semiotics is regarded as an early attempt to understand visuals as representation and communication. Visual semiotics, regarded as 'visual grammar' by Kress and van Leeuwen (2006), suggests rules that set the 'professional' apart from the 'amateur'.

Three approaches to semiotics focus on the meanings of regularities in the ways that visual elements are used. They are the syntactic, semantic and pragmatic. Peirce offered a triadic (three-part) model (1867) from the pragmatic perspective for understanding the object, its representation and its interpretation. Morris, a successor to Peirce, extended Peirce's work on the syntactic, semantic and pragmatic approaches as he conceived of semiosis as a chain of observable occurrences (1957). Below, I discuss the three approaches in relation to visual communication.

Following the early studies of 'grammatical approaches' (cf. Bertin, 1983), some researchers have discussed visual semiotics from the syntactic perspective. Engelhardt (2007) explained syntactic structures in graphics as the dominance of visual meanings are firmly coded and buttressed in the relationships among signs in formal structures. In his work, distinctions are made among the graphic constituents themselves, the many types of meaningful graphic spaces, and possible graphic properties such as size and colour. For example, visual segmentation, as suggested by the syntactic semiotic approach, can be traced through the behaviour of viewers who perceive images and create meanings. The semiotic approach developed in visual communication uses the syntactic perspective to explain the ways graphics are segmented and to examine the rules for their specific combination.

By analysing how people create meaning from sequential images, Cohn (2013) suggested a visual narrative grammar for understanding the relationship between signs and the objects or elements to which they refer. This theory was developed by using comics as to investigate the context-specific instructions for organising subjects into narratives (Almeida, 2016). The basis for such ontological discussions on visual narratives is visual semantics in semiotic studies, which seeks to explain how viewers understand a narrative or story by looking at a sequence of images. On the one hand, the graphic presentation is mediated visually through individual visual as well as the internal relationships within narratives. On the other hand, the story could be expressed in linguistic form, but the point is that they are realised or transformed through a visual means. The semiotic modes of writing form or visual communication each have their own specific means to convey meanings through semantic relations.

The third branch of visual semiotics, the pragmatic perspective, focuses on the relationship between visual signs and their effects on the people who use them. In one of the pioneering works in this field, Kress and van Leeuwen's approach to communication starts from a social base (2006), and their work on visual representation is set within the theoretical framework of social semiotics. It is noteworthy that the reasons behind the re-emergence of visualisation as an important mode of communication have come from historical, social, political and technological perspectives⁸. Thus, visual perception allows multiple ways of reading and multiple uses regarding the development of social aspects, such as electronic technology. Yet the semiotic landscape becomes complex when the world is constantly re-designed in and by our semiotic actions. Viewers no longer rely on a singular channel for comprehension; thus, a visual language that mixes modalities has been of particular interest in theoretical research (cf. Macken-Horarik, 2004; van Leeuwen, 2005; O'Halloran, Tan, Smith, & Podlasov, 2010; Boeriis & Holsanova, 2012; Kress, 2014). Within this paradigm, there is some recognition of relationships among the various modalities in that the visual language is guaranteed by culturally and socially produced resources of visual representation in our semiotic world.

The visual information structure and semiotic studies

The previous section provided a glimpse of the diversity of semiotic theories and the relevance of these theories to news visualisation. These opportunities are accompanied by challenges concerning the ways such visual perceptual research can be undertaken in visual news. Moving beyond those visual practices in this field, we find three communicative demands that deviate from the contributions of visual semiotic studies. They are the need to: 1) communicate about the conceptual thinking required for creating graphic grammars in a composition, 2) communicate about the practices for transforming written documents by visual means and 3) have the ability to design graphic re-presentation in different multimodalities.

My argument concludes with a brief account of how visual grammar might function. The use of visual space forms internal coherent meanings. Considering

⁸ Here, the first appearance of visual dominance refers to cave paintings, before the invention of writing. When print newspapers existed for recording information and publishing news, textual forms of writing became dominant as representation. As technology has evolved, the ability of print news to record information expanded. There gradually emerged black and white photos, colour photos, information graphics and other visual forms.

the 'grammar' of different semiotic modes in layout and navigational structures, visual elements with semiotic affordances implicitly organised in specific ways deliver a range of visual perceptions accordingly (Kress & van Leeuwen, 2001; Bateman et al., 2007). For example, a layout structure is created to specify the information in each unit, such as font, size, type, colour and resolution, for a page. The 'grammatical forms' (Bateman et al., 2007) lead to components of larger visual elements and then are collected to group the layout units together. The ways in which they are collected depend on the stratification in the hierarchical structure. In other words, the visual objects on the page can be deconstructed according to the semiotic affordances.

Kress and van Leeuwen (2006) have attempted to outline methods for analysing shapes and colours, all of which may represent 'thoughts' as the visual forms referenced above. Regardless of the emotive meanings (colour codes) in visual news, colour (or colour contrast) is used widely to realise the affects in the sensory coding orientations that inform either art appreciation or meaning differentiation. Colour, as a powerful communicative mode, can be used to denote people, places and things as well as classes of people, places and things. For example, different colours represent different political parties in a country. The colours of flags, in another case, denote states and sometimes their unique identities.

Meanwhile, typography fulfils the semiotic functions for representing actions and qualities. As van Leeuwen explained,

A word can be changed into a 'warning' or a 'question' through typography and typographic signs alone... and typography can also be used to express attitudes towards what is being represented. It can 'interpret', or you might say, 'perform' texts, or parts of texts, as 'modern', or 'traditional', 'capricious' or 'serious', 'exciting' or 'dull' and so on. (2006, p. 143)

It is important that typography not be isolated from the other communicative modes with which it almost always co-occurs. Just as is occurring in the practice of contemporary infographic designers, the boundaries between the formerly distinct specialisms of design, such as illustration, photography and typography, are now eroding. Designers are usually more interested in blurring the boundaries between lettering forms and images, as the tight coupling of texts, images and shapes creates a unified message. The relationships among the elements complement the meanings as well.

When graphic literacy is analysed in the construction of a visual information structure, some of the 'rules' are highly conventionalized. Thus, literacy must therefore involve familiarity with the conventions surrounding particular practices. Graphics designers must be able to use layout and typography to create a visual space for searching, skimming and browsing content. Therefore, templates offer the benefit of creating efficiency, with options for composing visual elements for the purpose of differentiation. At a conversational level, visual conventions create an encounter for viewers to appreciate familiar behaviours, appearances, hierarchies and critical stances that are obvious and in which key prior knowledge of reading the visual information structure is useful.

3.3.3 Cognition

One difference between the Gestalt and semiotic approaches discussed above is that the Gestalt approach considers visual segmentation and its meaning attribution processes and interrelations. It also stipulates some practical laws according to the inference of meanings. This approach is sustained from the perspective of visual production, whereas the semiotic approach emphasises visual segmentation to be a result of contextual choices. Socially shared knowledge, intended meanings and attributed meanings in a situational context are important in the process of visual interpretation (Müller, Kappas, & Olk, 2012).

At the same time, both the Gestalt and semiotic approaches recognise the principles of visual perception. Specifically, the application of Gestalt principles based on figure-ground, proximity, similarity and continuity is structural both from the social semiotic perspective and the cognitive perspective. Similarly, we cannot deny that the basic assumptions about structuring and the perception of visual elements could be explored without cognitive thinking. Though there is overlapping thinking in analysing visual elements, the cognitive approach here discerns the dynamic process from a reception perspective, involving the facets in culture, environment, expectation and memory.

Where a person comes from and what he or she learns from those surroundings make up the person's cultural orientations. In the process of visual creation and perception, culture draws on the personal experiences of visual communication. Different forms of visual elements are dependent on different cultural meanings. Visual journalists are constantly aware of the cultural meanings or terms that affect the visual perception of those from other cultures.

Environmental factors may refer to the place where the visual perception occurs. If the room is too hot or too cold, the screen is not clear enough or the lights are too dim, viewers will be distracted from the visual presentation. The context and environment in which viewers are located determine how they may transcribe the visual message into ideas.

When people open a newspaper or a magazine, they may have an expectation about the visual message. Therefore, expectation is a mental activity that defines rules for what should happen. Sometimes it matches the principles set by the conventions that have been widely conceived in society. In this case, visual journalists are aware of the conventional expectations of potential viewers. *The New York Times'* interactive teams think one of the rules for good interactive designs is to make it very clear to readers what to expect when interacting with the site (*The New York Times*, 2009).

Memory is a powerful determinant in the processing of visual perception. An attractive image that has been seen before will arouse people's previous experiences of the situation and then sparks interest. As digital genres develop, digital newspapers afford some functionality, such as archiving, that was previously impossible. The attributes of time and space are fulfilled while we learn to filter the relevant content accordingly in an online conversation. To some extent, online channels help to accomplish people's willingness to memorise visual messages (Waller, 2012).

The visual information structure and cognitive studies

With the cognitive approach, researchers in the field have investigated where and when people look at a scene, and why they do so (cf. Henderson, 2007). The promise of cognitive studies then is that it can provide us with some clues about how: 1) attention is typically directed to the potential location, 2) context influences visual perception and 3) prior knowledge and values affect visual processing.

Perceptions of visual information structures in news websites integrate processes and sub-processes that create intricate relationships in cognition. For example, visual perception depends on visual exploration. A good image works to accomplish different goals to connect with viewers, to direct viewers' attention and to promote understanding and memory (Kosslyn, 2006, p. 6). Thus, attractive visual elements get the most interest and attention from viewers. Through personal experiences, knowledge and contextual information, users view these informational visuals and form their own interpretations, and this

is then followed by emotions. Some loops may occur between visual meaning perception and interpretation during this process. In addition, there may be some additional changes from the context that affects the thresholds of personal emotions.

If viewed through in-house visual journalists' practices and routinized work, the practitioners' personal experiences with visual perception are strongly related to organisational values. As was discussed before, each newsroom has its own visual stylebook and 'personal' values, which are emphasised in the complete visual language. In this sense, viewers loyal to a newspaper brand will definitely follow its visual perceptions. Therefore, viewers' perceptions may not be of graphics that refer to the 'accurate' social consensus; rather, visual perception is an organisational manufactured product (→ §2.3).

3.4 Interactive information graphics

Online newspapers are keen to enhance their online presence with a variety of interactive features, though we have seen rather experimental cases in the last few years with a mostly conservative stance toward the new medium (Larsson, 2012). At the same time, the multimedia features of journalism, e.g., 'Snow Fall' by *The New York Times*⁹, are regarded as representative of the technological adeptness of today's journalists and the driving force behind a new period of literary journalism (Jacobson et al., 2016). We have seen that such information graphics have gained momentum in recent years as a genre for relaying information visually. Finnish newsrooms have confronted challenges in news production, distribution and consumption (Lehtisaari et al., 2012), especially in an era when regional newsrooms face the reality of establishing paywalls for most of the online news content. The requisite of new hybrid forms and patterns of information graphics has emerged from the market. This reflects the new complexities of interactive information graphics.

Interactive information graphics can be difficult to grasp because of the hybridity of different modes, such as texts, visuals, moving graphics, data and layout. Yet when this hybridity intersects with digital technologies, how the visual information structure creates a cohesive whole would trigger further

⁹ *The New York Times* is an American daily newspaper, founded and continuously published in New York City since 1851. *The New York Times* has won 122 Pulitzer Prizes, more than any other newspaper. The prizes earned by the newspaper has represent excellence in journalism in a range of categories. *The New York Times* is also aggressively and creatively adding multimodal elements into its traditional package of news and features, and this has made it an innovator in online journalism.

thinking about the production process and the visual product. This section presents a discussion of different types of interactive information graphics that span multiple functions on news websites.

3.4.1 Information visualisation and data visualisation

In the last few decades, information graphics (infographics) have been the mainstay of newspapers and news websites (Reavy, 2003). Previous studies have demonstrated that information graphics are effective for directing viewers' misperceptions (Geidner, Pjesivac, Imre, Coman, & Yuran, 2015), communicating with the audience (Davis & Quinn, 2014) and facilitating viewers' judgments and engagement (Moys, 2017). Thus, the compound word infographics and the term information visualisation can be considered synonyms. Yet information visualisation is an umbrella term for describing all kinds of visual representations, including visual representations of numerical information. As Friendly notes: 'the term *information visualisation* is generally applied to the visual representation of large-scale collections of non-numerical information, such as files and lines of code in software systems, library and bibliographic databases, networks of relations on the internet, and so forth' (originally italicized, Friendly, 2009, p. 2). Pettersson (2002, p. ix) defines information visualisation as comprising analysis, planning, presentation and understanding of a message; thus, information design comprises the communicative needs of aesthetic, economic, ergonomic and subject matter requirements. Therefore, infographics are more likely to be regarded as visual representation, rather than being interchangeable with the term information visualisation.

If people have already taken static infographics for granted in news websites, then they will have been surprised by their use in news stories. This is the reason that we prefer the term interactive information visualisation to distinguish visualisation from other counterparts in print, radio and television (Schroeder, 2004). A good example of the complexity and hybridity of interactive infographics is the artefact 'How Usain Bolt came from behind again to win gold'¹⁰, published by *The New York Times* in 2016. The story used a panoramic view to showcase a handful of critical moments of Bolt's reactions from the starting gun to the finish line. In the information visualisation, the figure of Bolt was highlighted, and each critical moment was indicated along the track. Unlike static graphics, the whole information graphic on the news website was

¹⁰ Retrieved from <https://www.nytimes.com/interactive/2016/08/15/sports/olympics/usain-bolt-mens-100-meters-final.html>

interactive so that viewers could scroll over to see the entire race. In addition, one of the sources was a performance biomechanist who served as a consultant for the depiction of how Bolt got to full speed with a short reaction time.

It sometimes seems difficult to name the type of information visualisation used in newspapers or on news websites, as interactive information visualisation may involve hybrid forms of the genre, such as video graphics, motion graphics, animated graphics, interactive features, interactive narratives and data visualisation. In the case of Bolt's story, published in 2016, the data collected from the bio-mechanist was significant for both the editorial and the design departments, and it has revealed one of the main features of interactive information visualisation. Technology not only gives the journalists several new methods for telling news stories, but it also inspires the visual display of information (Staff, 2014).

The need to display artistic and scientific artefacts through maps, charts, or diagrams to help viewers understand complex information comes from journalistic values (George-Palilonis & Spillman, 2011). Although usability – the speed and ease with which readers could interact with the graphics – has been considered crucial for good interactive information visualisation (*The New York Times*, 2009), the credibility of content (data, in this context) is extremely important for newsrooms. If people are not looking at the content, the interactivity of the graphics does not matter. Data visualisation is inextricably bound to the journalistic norms of accuracy, fairness, detachment and objectivity – long established in professional codes of conduct (Dick, 2014). Thus, the term data visualisation is appropriate for highlighting information visualisation in this context.

Data visualisation, a specific aspect of interactive information visualisation, is defined as 'the science of visual representation of "data"' and 'has been abstracted in some schematic form, including attributes or variables for the units of information' (Friendly, 2009, p. 2). Classical visual representations include statistical graphics and thematic cartography (Tufte, 2001), which are still commonly seen in news websites. The ability to explore statistical data through visual representations has caused data visualisation to be one of the important visual means for displaying and discovering data in news visualisation – from the simple mapping of locations (land, rivers, terrains) to the spatial distributions of geographic characteristics (species, disease, ecosystems) (Friendly, 2009).

Recently, data journalism has gained public awareness because of the open data movement and data-driven journalism. *The New York Times* is a leader in

using infographics for data visualisation. Their artefact ‘How Mariano Rivera Dominates Hitters’¹¹, published in 2010, won ‘Best in Show’ at the 19th Malofiej, the ‘Pulitzers of the infographics world’. It explained the pitching mechanics of a baseball pitcher through animated graphics. The data collected from the nearly 1,300 pitches Mariano Rivera threw in 2009 became one of the most important messages for visual producers. A great deal of preparation and research goes into the basic construction of information graphics.

In the hope of arousing the viewers’ interest and promoting their understanding of news, newsrooms have adopted a variety of visual elements, such as photographs, infographics, illustrations and charts and maps, to convey statistical data, especially opinion polls, economic changes and disasters. Therefore, the close relationship between the data and graphics departments in newsrooms is understandable. Before the start of any creative project, a clear goal must be established for the visualisation or infographics. Collaboration and coordination among co-workers lead to success in news visual production. In addition, maintaining a consistent and identifiable visual identity that the newsroom has carefully crafted over the years is important. How to best present the data as static, an interactive or even a video is an important design decision that should be based on the clarity of the concept, context and purpose.

3.4.2 Multifunction

The ways in which interactive information visualisation is used and understood in the context of the current dominant communicative forms are strikingly different from the era before its existence, not least being the way visuals were most often used and understood when print text was dominant in public discourse. Fundamental changes have taken place in the forms of visual representation, the physical location of information visualisation and the relevant affordances conveyed by visualisation. This is perhaps most evident in the requirement for practitioners to present the news on multiple platforms. Because of the economic issues tied to changes in media convergence in newsrooms, every story does not need interactive content (cf. Baur, 2017). But visual journalists are committed to telling stories in the most innovative, engaging and appropriate ways as it is counterintuitive to expect viewers to be satisfied with less interactive artefacts on news websites where visual interactivity is key. A survey conducted in Iranian online media identified four

¹¹ Retrieved from <https://www.nytimes.com/video/sports/1247468158551/how-mariano-rivera-dominates-hitters.html>

factors that may impede the use of news graphics: lack of visual knowledge, designers' lack of appropriate skills, technical and communication limitations and lack of appropriate software (Salimi, Masoud, & Mazaheri, 2011). Following these four factors, it has been concluded that four functions are embedded in interactive information visualisation during the visual transmediation from print to digital.

Communicative function

From a series of open-ended, in-depth interviews conducted in the UK national media, the author has concluded that 'good interactive infographics' should be commissioned to enhance a story to make it successful but not to explain or explore the story or data better (Dick, 2014, p. 500–501). What does it mean to create successful interactive graphics? The worth of information visualisation stands at the communicative ability to make assessments. From a visual journalist's perspective, interactive graphics are treated as storytelling devices that can convey good journalism in instructives, narratives and simulations (George-Palilonis & Spillman, 2011). In a digital age, information graphics in their most basic forms as charts, diagrams or maps have become increasingly important as instruments for illustrating quantitative information (Tufte, 2001). But we cannot make unilateral meanings from individual forms. When the visual information structure is deconstructed, interactive graphics on news websites are embraced for journalistic storytelling that combines the newsroom's strategies regarding visual styles. Interactive graphics are becoming crucial in conveying information and corporate identities. For instance, *The New York Times* and *The Guardian*¹² are currently among the top news websites that have an incentive to use interactive information visualisation. The adoption of interactive visualisation reflects the availability of technical resources and assets, as well as the added value for news organisations' websites (Schroeder, 2004).

Technical function

In the current context of news delivery, computer manipulation has attracted much attention in both the profession and academia. News output has expanded rapidly since the early 1990s, and news has been available on several media – paper, television, radio, web and mobile phones. During the process,

¹² *The Guardian* is a British daily newspaper. Its online edition was the fifth most widely read in the world in 2014, with more than 42.6 million readers. The many prizes that *The Guardian* has earned for design include co-winner of the World's Best-Designed Newspaper awarded by the Society for News Design (2006), Front Page of the Year (2002), Website of the Year (guardian.com/uk, 1999, 2001, 2007, 2008, 2015) and winner of the British Press Awards for Best Electronic Daily Newspaper for six consecutive years.

newsrooms have undergone technical changes in visual production practices (cf. Erdal, 2007). Technical functions have consistently altered the methods of visual transmediation from print to digital. Newsrooms worldwide are using new technologies to edit and to transform interactive graphics. Finnish newsrooms have proposed a 'digital first' policy. Photography departments have become totally digital without traditional 'wet' darkrooms. The capacity for technical manipulation exists at the digital equipment, transmission and editing levels (Harris, 2002). As was foreseen, the future of journalism is online. This requires more creative workers with computer-assisted reporting and multimedia skills. Reporters with interesting ideas but without the ability to fully articulate how they should be executed would become frustrated when making decisions about visual graphics. The web has afforded new opportunities for producing interactive graphics that are useful to readers on an ongoing basis, and there seems to be value in making sure that visual production remains a technical function.

Aesthetic function

Besides interactive information visualisation in news websites, accuracy, accessibility, and engagement seem to be new added values facilitated by computer science. In delivering news content to viewers, especially breaking news stories, accuracy is paramount. The creative process is therefore secondary to accuracy. So, when time is of the essence, facilitating accurate interactive graphics is always the top priority. For another, it is that good information graphics meet viewers' expectations of 'beautiful' and 'elegant'. Classic design principles, such as Gestalt laws (→ §3.3.1) and the golden ratio, are pervasive in the process of visual creation and representation. If viewers cannot get instant gratification from the visual presence, then they cannot even go as far as 'what is this showing'. Meanwhile, arousing viewers' emotions and increasing their engagement are emphasised as ways to influence them to understand news values. This means that the concerns of successful interactive information visualisation have been expanded from being only a visual presence to telling news stories and contributing to a cohesive newsroom identity. In this sense, the bar has been raised regarding the public's aesthetic expectations.

Interactive function

Interactivity is integral to digital communication, as one of the key functions in the new media discourse. Visual journalists realise this function by activating visual objects. We may understand interactivity through visual semantics and grammars (→ §3.3.2). In practice, interactivity was accomplished through

hyperlinks in the hierarchical structure requiring viewers to react. Even though some studies have found that audience attitudes tend to be conservative towards interactive features in online websites (cf. Larsson, 2012; Hujanen & Pietikäinen, 2004), these features provide choices and allow viewers to adapt visualisations to their own needs and to explore them from different angles. For example, digital mapping interfaces (basic forms of cartography combined with the interactive function in news websites) are mediated to create spatial meanings by translating between and inviting the action of users, vehicles, programs, etc. (Lammes, 2017). Interactive graphics successfully engage viewers in a conversation, thus requiring appropriate responses from the viewers. During this communication, the options of control and choice require perceptible actions between the interactive graphics and the viewers (Weber, 2017). Although newsrooms have put more effort into creating interactive information visualisation on news websites, visual producers think that ‘the interactivity or the “coolness” of the application should have real value’ (*The New York Times*, 2009). For visual journalists, interactivity is similar to the other tools at their disposal, such as colour, typography and text. These tools are being combined to achieve the goals of engaging viewers, helping them to understand complicated concepts and immersing them in an interesting environment. But interactivity is usually applied when it is the best tool to make a story come alive, when the high cost of visual production is being considered or when time is limited.

3.4.3 Multimodality

Multimodality is a way of characterising communicative situations with combinations of different ‘forms of expression’. In this dissertation, I define multimodality as ways of realising effective visual communication in news websites. It combines texts, graphics, diagrams, visual compositions, photographs and videos with communicative capabilities

Multimodality has garnered much attention in academia. It addresses a phenomenon that is crucial to understanding an environment in which almost all forms of communication coexist on one platform. In a time of rapid change, people are immersed daily in a great deal of information in a variety of communicative forms. The ongoing revolution in multimedia design and digital technology within contemporary society at large has led to a proliferation of multimodal sources in academia as well. Rather than presenting a comprehensive understanding of multimodality studies, this section examines

the field from two perspectives – cross-media production and multi-platform distribution.

Cross-media production

Complex media organisations contain multiple journalistic cultures, and the introduction of media convergence and cooperation across media poses huge challenges for organisational production cultures and processes (→ §2.3). Erdal (2009a) looked at production cultures in an integrated news broadcasting organisation that had experienced convergence in radio, television and web. He used the term cross-media journalism to emphasise the relationships among different media platforms rather than the transformation of the physical carriers of communication. Meanwhile, he has contributed to the reality of news convergence as well as the challenges of different journalistic cultures meeting as a result of convergence in the newsroom. It means that the medium of reproduction in the newsroom has become more complex, especially when increased reproduction and republication have given heightened status to a ‘digital first’ policy, which has become pervasive among Finnish reporters and visual journalists.

Because of the late emergence of digitisation in the newsroom (compared to the long history of print newspapers), we have seen the web as a reproductive platform, relying heavily on reproducing content already produced for print papers. However, the importance of multimedia production in terms of communicative forms (→ §3.2.2) and semiotic modes (→ §3.3.2), in addition to the feature of efficiency in delivering news content, is now quite clear. With its own materiality and affordances for communication, multimodality in turn involves new forms of expression.

Because production and reception require viewers to interrelate all sign repertoires, multimodal research refers to both communicative artefacts and processes that combine various sign modes (Stöckl, 2004). Different forms of communication can work effectively as multimodalities to characterise communicative environments. The book uses written texts, images, diagrams and page composition. The television program uses spoken language, pictures, texts, videos, etc. The video game uses images, videos, sound and animations. How precisely the various forms of communication are combined productively within the environment is attributed to the meaning making process. On the other, the selection of a qualifying medium depends upon the appropriate affordances of the modes. For instance, interactive information graphics are used instead of static images for efficient communication as well as a dynamic visual

representation on news websites. Thus, the new media ‘make it easy to use a multiplicity of modes’, and the affordances of the new information technologies and communication facilitate the ease of use of different modes (Kress, 2003, p. 5). We can see that how successful people make sense of the meanings of multimodal communication depends on how they make use of a multiplicity of modes.

Considerations of what is desirable in a situation will be useful for addressing the appropriateness of the medium in the context. This concept comes mostly from semiotic discursive territory (cf. Kress & van Leeuwen, 2001; Ventola, Cassil, & Kaltenbacher, 2004). The major features – the material characterisation as well as distinctions – of a medium determine the production and understanding of visualisation. More generally, the possibility of cross-media production is subject to the appropriateness of specific media. For instance, news photos are widely thought to be reliable and credible as we regard our sense of sight as more reliable than written texts. One of the reasons why interactive information visualisation seems to be dominant is the reliability of statistical sources and thinking. Therefore, reporters and visual journalists take responsibility for questioning the reliability of cross-media production according to their respective professions.

Multi-platform distribution

Journalism for multiple media platforms has been called multimedia journalism (Deuze, 2004) or convergence journalism (Huang et al., 2004). This is a situation faced by most newsrooms, given the shrinking circulation of print newspapers. Therefore, a common opinion holds that the digital content strategy is to distribute news on two or more media platforms, including print newspapers, news websites, and mobile devices, in an integrated way (Erdal, 2009b). In the reproduction process, the physical (technological) conveyor of communication changes, and visual journalists will become adept at working on multiple media platforms. The advantage of multi-platform distribution is obvious. Content-sharing across multiple platforms is beneficial for the whole news organisation (Dailey et al., 2003). Reporters and visual journalists can spend fewer resources on republishing and updating news content (Erdal, 2009a). In addition, hybrid teams of journalists can work together to plan, to make decisions and to produce the channel resources in the most effective way, either in print or digital forms. In this sense, the platform is primary – as important as news content (García Avilés & Carvajal, 2008). Besides, another benefit for a new multimodal narrative structure for the various platforms is to

create different implicit consumers (Scolari, 2009). But how do we proceed from multimodality to multi-platform distribution?

In a newsroom that is focused on print and the website, a large percentage of the multi-platform distribution is related to medium reproduction and content republication. The forms of communication in news websites remain largely the same as those in the print version, while dynamic content such as interactive information visualisation is planned exclusively for digital formats. This implies additional production from the creative staff.

If a mode is regarded as a means for meaning making, then we may say that the term multimodality is used to highlight the fact that people use multiple means for making meaning (Jewitt, Bezemer, & O'Halloran, 2016). The claim inherent in such a position is that, first, visual practitioners now have diverse forms of meaning-making tools to deal with the particular challenges and questions. Second, it is insufficient to focus on one particular 'form of visual expression' within a communicative situation, as there is a context to be considered. Multimodality has touched multiple aspects of the technology behind the representation, the level of realism and novelty in the visualisation, exploration and analysis of phenomena (cf. O'Halloran et al., 2010; Stöckl, 2004; Jewitt et al., 2016; Bateman et al., 2017).

Based on the social semiotic perspective, Bateman and his colleagues defined spatial dimensionality, either in 2D or 3D, as a 'canvas' that presents the interface provided by the medium for viewers of the message conveyed by the medium (2017, p. 101). Because the locus of the semiotic activity is complex, the 'canvas' can be difficult to articulate when transforming the medium from one platform to another. Current news websites combine different ways of delivering data and information for print and digital platforms. This kind of journalism is not just informative, but interpretive – filled with description, feelings and stories depicted by the news organisation. Thus, the newsroom ensures that users have the tools for decoding and understanding the message appropriately.

3.5 Summary

Based on an analysis of visual literacy in newsrooms, this chapter posits that the forms of visual journalism are vibrant, and practitioners will take the time to look carefully at the internal messages while representing them with the appropriate visual language from the toolbox. We have seen that the classic design principles, such as Gestalt laws, reflect visual literacy from conventional, semiotic and cognitive perspectives. In the analysis of the visual information

structure of news websites, we have seen that the visual language represents the integration of visual knowledge and visual journalists' technological skills for delivering news content. An original focus on some domain of phenomena, often anchored in some traditional design principles, can be also pushed to include other phenomena that appear in some way related, or to function in similar ways, but in a digital platform (Bateman et al., 2017). Such digital storytelling not only amplifies visual journalists' skills but also furthers the understanding of the potential of online visualisation for dynamic visual representation.

As a consequence, then, although any reader of this dissertation may already be placed within one or more of the disciplines in the process of visual transmediation, it is useful to go beyond such visual literacy in order to draw out more of the commonalities in-between and difficulties faced to today's visual journalists. By no means, therefore, do we consider some original visual literacy in crafting print papers to be the complete story of the visual journalists' toolbox for creating a visual information structure in news websites. The technological developments in computerisation in journalism parallel the professionalization process of journalism that emerged in the 20th century (Lievrouw & Livingstone, 2006). Distributed technologies, such as the Internet and computer networks, inspire visual thinking and practices in newsrooms. For instance, the visual display of quantitative information (Tufte, 2001) can be realised in the form of interactive graphics. Visual transmediation, as a prevailing feature of visual journalistic professionalism, has differentiated the designer's role in the newspaper industry. Newspapers around the world are undergoing change. The Finnish newsrooms provide an example of this phenomenon as visual journalists rethink their design techniques, analyse their practices and seek new solutions and tactics.

Another central idea of the changes in visual transmediation is multimodality when looking for traces of designed artefacts. Combining different forms of expression is indeed very old, and notions that multimodality is a new phenomenon are inaccurate. Rather, it is appropriate to beneficially think about the questions – i.e., what effects does multimodality bring in different platforms and through what channels could different forms of expression be combined? In this chapter, I have started setting out a foundational scaffold for the 'space' within which multimodal issues can arise. It is supported by the visual basics in reproduction, and is advanced when concerns of multimodality have asserted themselves in various forms as well as in multiple platforms.

The current practices in the new media environment have influenced the development of new curricula and even institutes in visual journalism. It is not sufficient to know only how the cognitive process facilitates our understanding of visualisation and how picture elements are grouped, defined and explained. The advent of multimodality in visual information structures has created a new field to be explored. It engenders other questions such as how a reliable relationship between visuals and texts can be sustained in the new environment. Not only visual journalists are crafting practices but also reporters who are dealing with text-based journalistic sources need to acquire the 'know-how' in an ever-changing media environment.

CHAPTER 4

Editorial Creativity in News Websites

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Editorial Creativity in News Websites: the Three Dimensions of Hierarchy, Sequence and Consistency

Yiyun Zha

Historian Daniel Boorstin famously said, “Our society is particularly ingenious at thinking up alternatives to the book” (1983). Indeed, we have thought up entire revolutions of communication, although these have been rare in human history. The first such revolution was the development of language hundreds of thousands of years ago; the second, the development of reading and writing in the Middle East about 5,000 years ago; the third, the invention of the printing press 500 years ago (Stephens 1991). However, today the death of printed newspapers is an increasingly common subject of speculation, which is the result of the fact that the general circulation of newspapers is dwindling dramatically. In surveys conducted by the Pew Project for Excellence in Journalism¹, 34% of respondents said they read news online within the past 24 hours (as opposed to 31% who favoured newspapers), and a full 41% said they got most of their news online – 10% more than those who said they got most of their news from a newspaper (O’Dell 2011). We are witnessing the emergence of a new medium – the meta-medium of the digital computer. For a long time, we have been watching the web’s impact not only on how newsrooms and newspapers are affected, but also on the way viewers and readers get their news.

1. The Pew Project for Excellence in Journalism is a tax-exempt research organization in the United States that uses empirical methods to evaluate and study the performance of the press. The News Coverage Index is a weekly report produced by the Project for Excellence in Journalism, which identifies the main subjects covered by the mainstream media in the United States, and analyses the percentage of the available space devoted to each major subject. The data sources were mostly collected from the United States, but it showed the general picture of the phenomenon worldwide.

With the networked personal computer as the condition of modernity, Arthur Sulzberger, publisher of the New York Times, was even wondering if they would stop printing the paper, and focus on the internet instead, when he was interviewed in 2007 (Avriel 2007).

Yet the reality is far from people's conjecture of the death of printed newspapers. Online newspapers have not completely taken over the market, even though they emerged early in 1994. In Finland, 2007 saw the launch of online-only newspaper Uusi Suomi (www.uusisuomi.fi), resurrecting a brand with a 100-year printing heritage, and the financial daily Taloussanomat (www.taloussanomat.fi) ended ten years of publication before concentrating solely on digital delivery (Thurman & Myllylahti 2009, 692). Logic might suggest that the readership of online news would increase when that of printed newspapers shrinks, as online newspapers eliminate the costs of the production and the distribution of a physical product. A common criticism of online journalism, however, centers on its failure to take into account the unique characteristics of the medium. Yet the concept of new media comprises the new interconnections of media technology. In this sense, media technologies have performed a "re-embedding", irrespective of the distance of space and time, in relation to distant others, issues, and arenas (Jensen 2002).

In spite of the advantages that an e-newspaper has (for example, efficiency, promptness, and convenient accessibility), digital newspapers as an alternative can hardly replace printed versions, since people become accustomed to experienced ways and behaviours. At the same time, one puzzle faced by practitioners today is their readers' low satisfaction with e-newspapers because of poor experiences with the newspaper's website interface. "It's changing, but it's still not there yet", said Juha Tahvonen (2013), the Creative Director of Seven-1 advertising agency based in Rovaniemi.

In Jensen's (2002) research of media and communication, he treats communication not as incidental, but as a necessary constituent of social life, which is relevant to theories of society and culture. From a historical and anthropological perspective, mediums – such as body language, active discourse, broadcasting and the internet – declare their functions in orienting a person's practical consciousness and everyday routines. In the online space, mediums tend to be generated under a hierarchy of levels for new media objects, as Manovich (2001) concluded: interface – content; operating system – application; web page – HTML code; high-level programming language – assembly language – machine language. This article focuses on the digitally processed

forms of representation and interaction (collectively performing a visual language through cybernetics), that are placed within modern visual and media cultures. I suppose each medium facilitates communicative process in specific ways, thus participating in the production of older cultural forms and languages. Furthermore, the expression of graphic narratives indicates a high-quality performance by breaking the ice between the old media and the new. My interest in this hypothesis and experiences as a practitioner leads me to question our perception of the visuals around us when a “bigger picture” is emerging, and I will illustrate how the visuals are able to create the illusion of reality. In the following sections, I outline how the visuals and texts of old media interrelate in new media. The discussion is based on some online-only newspapers, which serve as a corollary of today’s publishing industry, although they suffer enormously from the criticisms of news reliability, authenticity, and the capacity to apply multimodalities compared to print media (Thiel 1998; Manovich 2001; Pulkkinen 2008). Since reliability and authenticity are beyond the remit of this article, I will instead make it clear that in communicative design practices there are certain fundamental principles to follow in applying new mediums. Because of the characteristics of the new medium, it is necessary to consider what the principles mean in relation to the application of the incidental multimodalities. It will be apparent throughout this discussion that it is possible to track the conceptualized layout by exploring how the news is informed and organized. Thus, finally I will consider how such design principles improve reading experiences, and how this knowledge might be manifested in useful practical work. It will be shown how designers develop a complete concept behind the dissemination of news instead of showing readers static images.

Learning from Two Online-Only Newspapers

To set the stage, this study explores two Finnish online-only newspapers, Taloussanomat and Uusi Suomi. A brief review of the page-view statistics of the two websites makes it easy to demonstrate the particular phenomena they are confronted with. Taloussanomat is the second largest online daily business newspaper in Finland, beaten only by Kauppalehti, owned by Sanoma Corporation². Since 28th December 2007, it was only published on the internet,

2. Sanoma Oyj (Sanoma Corporation in English) is a leading media group in the Nordic countries with operations in over 10 European countries. It is based in Helsinki.

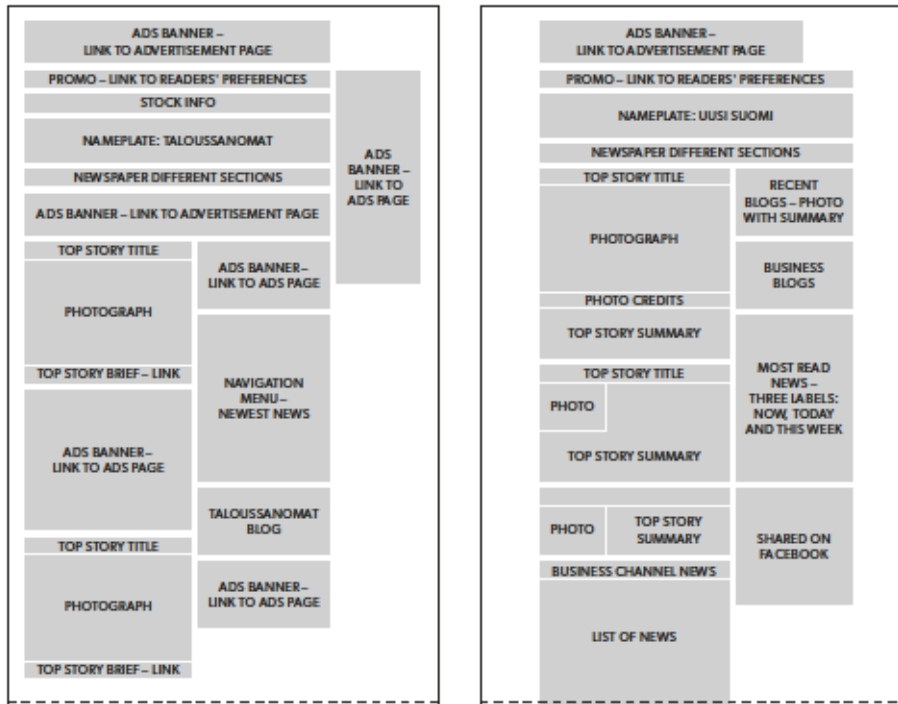
from Tuesday to Saturday, and concentrates mainly on financial and political news. Uusi Suomi was a Finnish daily newspaper, published from 1919 to 1991. In 2007, the publishers announced that it would start an online-only newspaper beginning in the autumn of that year. Today, *taloussanomati.fi* is relatively popular among Finnish users. According to Alexa Traffic Stats³, direct visits to Taloussanomati are roughly 10% of those coming from a search engine, and visitors to *uusisuomi.fi* spend approximately 74 seconds viewing each page, and a total of six minutes on the site during each visit. In addition, both websites have measured a decline of traffic in the recent months (observation results from January to June, 2013).

Centuries of experience trace the history of printed newspapers. Compared to today's web-focused newspaper design, there are formal and functional features for pages, headlines, columns, and fonts between different contexts or content in printed newspapers (Nielsen 2000). Each of these features combine to construct a user friendly and good-looking newspaper. In the new media era, news services require new design solutions in the graphic design discipline. With the emergence of the concept of experience and interactivity as central to user interface, recent methodological approaches to design practices have begun to investigate concepts of creating style. Media critic Howard Kurtz notes the common phenomenon happening to online news websites:

As you travel around the country, it's hard to tell where you are by reading the local papers. They all carry the same wire stories, with the same syndicated columns. When there were three or four newspapers serving each city, they had distinct personalities – eccentric or irascible, crusading or corny. Now most of them look like they're put out by the same faceless market research folks. Once you get beyond the dozen or so top markets, there are hundreds of breathtakingly mediocre newspapers out there. The growth of chains has stamped hundreds of one-newspaper towns with a certain ethos – what Jack Germond calls “corporate journalism” – that is not quite awful, but awfully boring. (Kurtz 1993, 362.)

With the information explosion era in full swing, it is an urgent priority to create style in order to stand out from the “hundreds of breathtakingly medi-

3. Alexa Internet, Inc. is a California-based subsidiary company of Amazon.com that provides commercial web traffic data.



↑ Figure 1. Layout of taloussanomat.fi website, left align.

↗ Figure 2. Layout of uusisuomi.fi website, center align.

ocre newspapers”. The point here is that a unique and appropriate style may attract more attention through its distinctiveness, rather by emphasizing style over substance (Thiel 1998). By a “creative style” I mean one that integrates the three dimensions (hierarchy, sequence, and consistency) of designing news website layout. These three dimensions are central both to the development of the online newspapers that participate in this research, and to the way that visual designers practice their craft. Nielsen (2000) argues that media workers must modify their skills for the interactive age, since reading online is different from reading papers. Therefore, publishers should adapt themselves for the digital realm by changing their style and learning to incorporate interactivity in news publishing.

Here I take up two examples, respectively *taloussanomat.fi* and *uusisuomi.fi*. To illustrate, I have made a clear outlined layout for both websites. As shown here, the newspaper section immediately provides readers with a series of discontinuous accesses to information, and appears as a collection of distinct components rather than as a coherent whole.

When we talk about what makes a good website, we usually go beyond the definition of layout to rethink visual experience through the following facets (Geest 2001, 131):

- *The features of the site work well. For instance, the site loads quickly, which requires photos to be optimised for the web; all links work well; the information is correct and credible.*
- *The site fulfils the functions the owner intended. For example, when the owner wants to offer visitors access to its services 24 hours a day, the site indeed offers its information and services at any time.*
- *The site fulfils the expectations of its visitors. Take taloussanomat.fi as an example: as a financial website, it has to offer readers access to its services, including real-time stock information, so that visitors value the site and get the information easily.*

From a functionality point of view, Geest identified a process-oriented checklist for website design. But, does that mean that web designers can fulfil all the needs of a website after they have read all the checklists? The designer's intervention in editorial products (here referring to website layout design) encourages consumers' attraction and improves sales because it adds value to the products both internally and externally (Martins 2010, 51). Website layout design is communication design. This is how communication design⁴ (*Icograda Design Education Manifesto 2011*, International Council of Graphic Design Associations, 2011) practices and design thinking move into the day-to-day operations of traditional business.

When considering the two layouts of *taloussanomat.fi* and *uusisuomi.fi*, it is recognizable that the two designs fulfil the functions mentioned above. These two designs, however, fall below expectations as communicative tools. Evidence of this failure can be found in the absence of a style intended to create

4. Since 2011, the International Council of Graphic Design Associations (ICOGRADA) redefined the phrase "graphic design", changing it to communication design. In the US, "graphic design" can no longer be used in design discipline. However, in Australia and Europe, the phrase is still in use. For the purpose of this article I have adopted the following definition: "Communication design is an intellectual, creative, strategic, managerial, and technical activity. It essentially involves the production of visual solutions to communication problems." (International Council of Graphic Design Associations 2011, 8.)

an attractive design. Although the expression of the layout usually indicates it as being augmented by individual bits and pieces of personal vocabulary, visual variables are presented as scattered among different sections, rather than functioning to remind one of a “language” of graphic representations. Advertisement banners are squeezed into story sections, which fracture reading continuity. Their outlined layouts provide a basic sense of what a news website might do, without prescribing exactly how the information might be structured for readers to follow. To develop the concept of information structure, I will reflect on design areas in which journalists and media scholars’ interests coincide in credible or critical commitments to news. It is my aim to investigate the visual information associated with what is referred to in the news. The information structure that is illustrated and proposed in this article is certainly not just sector arrangement in a fragmented map of website design, but in addition suggests colours, texts, and even interrelations between these two. Too many colours invite distraction, meanwhile knowledge of how colours interact with emotions helps designers control the power of colour, and systematically test variations of a concept (Lupton & Phillips 2008, 78). In other words, it is a complex task to follow news stories without a clear visual trail. “The graphic is no longer only the ‘representation’ of a final simplification, it is a point of departure for the discovery of these simplifications and the means for their justification. The graphic has become, by its manageability, an instrument for information processing”, notes Jacques Bertin (cited in Lima 2011, 73). A website provides visual clues that enable users to conceptualize their form. In particular, the layout of a website contains distinctive features that alert users to the function of the website components and their part in the inclusive contents (Toms & Campbell 1999, 1). I hypothesize that the attributes of website layout introduce a trail for readers to follow, which determines the website’s identity.

Working with Text-Image Relationships

From Social Semiotic Meanings to Semiotic Resources

Numerous studies examine the interrelated connections between text and image. Manovich (2001) argues that the acceptance of hyperlinking in the 1980s can be correlated with a preference for the aesthetics of collage in which radically different sources (texts, graphics, photographs, digital video, sound and the like)

linguistic, but multimodal. It is important in the practice of contemporary design not to isolate text from the other communicative modes, such as images, with which it usually co-exists, after having witnessed that the boundaries between the formerly distinct specialism of design (illustration, typography, photography, etc.) are now eroding (Van Leeuwen 2006, 144). Especially in the case of online newspapers as a new medium, the corresponding semiotic means of expression in text are no longer distinct territories, but are interconnected with many other modalities, for example image. In other words, if we are to be able to bring out the potential semiotic meanings of the interworking of images and texts, we need to extend the scope of linguistics and to incorporate it in a much broader theory of multimodality (Van Leeuwen 2006, 145).

Folkmann (2010) puts forward that aesthetics in design play a significant role in the matter of how design relates to meaning, that is regarding design's relation to its content of meaning. His findings also suggest we care more about the performance of design meaning in the physical form. In this vein, it is not enough to consider only the interrelatedness between text and image, we must also consider how the interrelatedness performs and reflects the construction of meaning, used by designers to achieve their goals. Undoubtedly, the development of digital technologies has brought about profound changes in the transference of information, which leads to the speculation that the barriers between static and dynamic objects are collapsing. In the sphere of semiotics and technology, it is reasonable to question whether the enhanced capabilities of online news perform better.

Given the behaviour of viewers who create meaning while perceiving images, we may be tempted to trace visual segmentation to certain forms and practices by the social semiotic approach (Boeriis & Holsanova 2012). Some researchers (Boeriis & Holsanova 2012, 260) describe communicative resources as inter-subjective emergent phenomena, rather than normative rule-governed phenomena, according to the social semiotic approach. Others, particularly Engebretsen, investigate such resources as a means of studying online news within the framework of relevant contextual factors when confronted with modern genre theory:

In a media-sensitive context, one can thereby state that a particular genre is recognized by the patterns of certain sign systems (verbal, visual, audio...) used within the framework of certain media systems (interpersonal, mass

and network media systems) to gain specific effects (make someone understand, agree, laugh, pay, dance...) in certain situations (news reading, discussion, stand up comedy, shopping, concert...) (Engebretsen 2006, 4).

Engebretsen's notion (2006), in his study of news as genre in motion, has provided assets for building up a relation between semiotic resources (verbal, visual) and situational specifics (a user's expectations and needs). Through the relation – as the connection of adequate technical infrastructure and necessary skills – imagination, creativity and ideas of genre development and quality emerge naturally at all levels of innovation.

Today, the news-reading situation seems to be much tougher for news publishers. As the statistics above show, both Taloussanommat and Uusisuomi have faced a decline in page views. Since viewing the two news websites is free for everyone who has access to the internet, the problem is twofold: how to attract readers' to spend their valuable, limited time on their news content, and how to present news to readers in a manner that offers value for the time invested, together with viewable, trustworthy, understandable, and meaningful news (Engebretsen 2006, 5). Professional and highly hierarchic text layout with an intentionally information-oriented mode of reading is expected. I propose it is the driver behind an information structure offering a fresh perspective in textual-visual relations.

Meaningful Text-Image Relationships

Although, in his article *Rhetoric of the Image*, Roland Barthes (1977) asserts that we are still, more than ever, a civilization where writing and text continue to be dominant forms of communication in society, he claims that the image conveys a linguistic message (other than a coded iconic message and non-coded iconic message). The conception of a "civilization of writing" is already outdated, but I do agree that the viewer of the image receives at the same time the perceptual message as well as the cultural message. Therefore, the perceptual message implies a cultural progression through narratives. Any semiotic system (literal or visual) has varying patterns and communication capabilities, each with its own advantages and disadvantages (Kress & Van Leeuwen 1996, 17–18). Therefore, if we are to understand the way in which vital image-producing interventions in a new media context make sense of the text, a theory of language is no longer sufficient and must be complemented by theories that can make the visual principles explicit. For example, in postmodern advertising design, text and image join

together in an intricate syntax that combines typography, photography, graphics, and text, to compose the message and to convey it to viewers (Bartal 2013, 54).

Since the birth of online-only newspapers, many studies have investigated and analysed their development to ascertain whether online news is credible and whether it is fulfilling its stated goals, and other studies compare it with the traditional medium to determine the differences between them. Most researchers focus on the skills of editing and reporting; few people have turned their attention to the graphics. Rather than focus on one area at the expense of the other, it would be more valuable to assess how visual and textual information work together. Paivio's dual coding theory separates the modes of communication into two subsystems: verbal and nonverbal. It is a single theory according to which the two subsystems are structurally and functionally distinct, but at the same time interconnected (Paivio 1986, 54). When visual and verbal information is presented in more than one modality, cognitive processing of information is enhanced and simultaneously leaves more artistic latitude for improved memory and elaboration (Coleman & Wasike 2004, 459). Despite Barthes's (1977) notion that textual communication forms a more complex syntax and meaning compared to visual information, visual systems appear to provide additional learning cues (Sadoski & Paivio 2001; cited in Coleman & Wasike 2004, 459). In the layout design, rather than being viewed as a single object for producing an integrated representation of the news, the whole visual system, including the tight relations between image and text or between different visual units, consists of a network of perceptual and interconnected meanings for the website. In this sense, Paivio's analysis focuses on the concept of system, which is defined by structural integration and functional coordination (Paivio 1986, 57). One example is that of bilingual or multilingual people, who have one or several language systems, each comprising a set of subsystems of reading, speaking, understanding and writing. Each subsystem may work independently and coordinate with one another, so that the subsystem fills the gaps between conceptions. In his work *Syntactic structures in graphics* (2007), Yuri Engelhardt suggests that images can be regarded as "visualizing the non-visual" in an attempt to clarify information of some sort, and meaningful graphic space involves signification: a spatial position stands for something (Engelhardt 2007, 25). The embedding properties of dynamic graphics bear intent and purpose rather than merely appearance (Paivio 1986, 59). Importantly for this study, the affective direction of the theory extends to practical production issues such as visual placement, variables, the structural system, and editing skills.

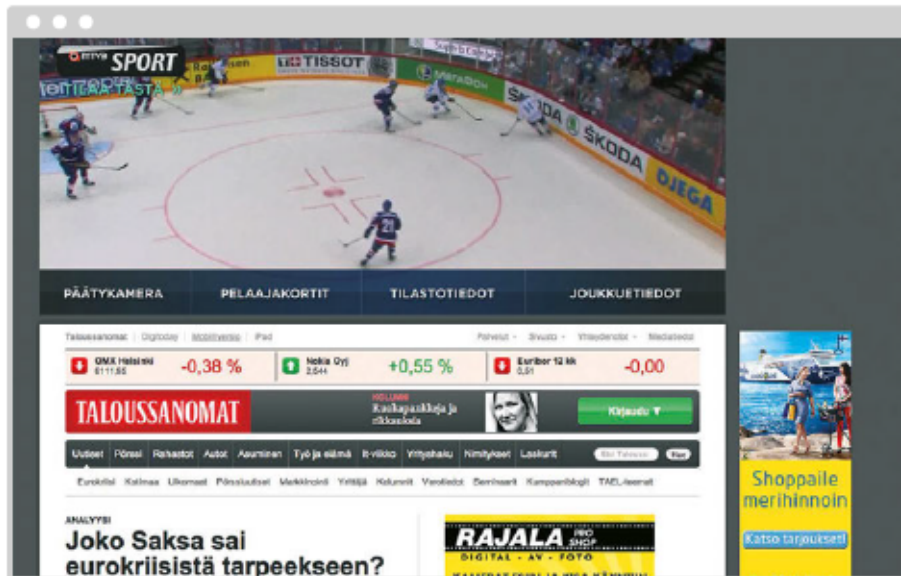
By expanding dual coding theory further to include newspaper website research, it becomes possible to predict how both verbal and visual elements are communicated, so that the process produces a better understanding for viewers, especially in the new medium while remediating the older cultural forms. In the next section, I identify how layout density is increased and by which means designers might create better experiences for readers. The rules illustrated below may become part and parcel of the guidelines for reading news websites as well.

Increasing the Layout Density

Adaption to Online Medium

In Finland, like elsewhere in the world, the circulation figures of newspapers have steadily decreased since the 1990s. Although several Finnish newspapers have revised their formats and redesigned their physical products – for example, both Helsingin Sanomat and Lapin Kansa changed over to a tabloid format – we find that the print media industry is situated in a moment of transition. Those dependent on printed words are now facing the fact that the monopoly of readability and information distribution, which lasted for over 500 years, is collapsing due to the ubiquity of internet access (Losowsky 2010, 4–5). This inevitable trend nowadays results in both challenges and opportunities for editors, visual designers and publishers. The concept of changing the format to seduce readers from traditional print to an online version requires new skills from both editors and visual designers that will hopefully one day become editorial conventions for online news. It seems desirable for two reasons: firstly, it is profitable and economical to seek digital solutions for the publishing industry; secondly, it stems from the changing conventions among digital and print designers.

For quite some time, the digital and the print world had nothing in common. Print designers used to look down on us. This has changed, not only because the last print designer must have realized by now that digital matter has become at least as influential as printed information, and digital designers are generally more experienced with structuring information for attention. On the other hand, it took digital designers quite some time to realize the value of traditional typographic theory. It was and is a slow process, but it is fun to watch how both worlds enrich each other. (Oliver Reichenstein, Information Architects.)



↑ Picture 1. Screenshot of taloussanomats.fi website layout on May 2, 2013. The advertising video element (in this case MTV3) takes over almost half of the window.

Pulkkinen referred to the notion of an “architecture of news” (Silverstein 1990; cited in Pulkkinen 2008, 99), suggesting an architecture in the overall structure of a paper and its sections, pages, and individual stories (Pulkkinen 2008, 253). This is consistent with the general picture of online newspapers. A well-designed newspaper must be edited to work on a functional-level and strive to attach importance to aesthetic values.

The makeup of a news page ought to reflect the news itself, imparting its sense of excitement, drama and importance (Allen Hutt).

Pulkkinen has already examined the design structures of Finnish daily papers in 2000 to 2005 (23 papers), and comes to the conclusion that reforms in newspapers often tend to comprise mere face-lifts as it is difficult to reform the content, ways of presentation, and writing practices (Pulkkinen 2008, 254). From a content-oriented point of view, online newspapers presented in computerized and digitalized versions face more challenges for story length. Meanwhile, representation and remediation means not only creation or imagination, but also comes with limitations (Losowsky 2010, 15). Lukas Kircher once said, “every

newspaper has soul” (cited in Losowsky 2010, 82). Moving from traditional prints to digital formats requires not merely copying news from one place to another, but rather it asks for a visual elevation of structural information. That is to say, the distributed channel needs to be aimed squarely at the target audiences, while complementing the concept well. In the production process of newspapers, verbalization and visualization have often been in conflict. But perhaps if the news content were edited with visual editing as the core concept, it would be more easily for readers to achieve the news. The progress means that, the “cognition” in news is better understood as emergent in relation to the potential of visual designers for establishing a visual trace to reveal some of the influential disciplines and fundamental differences in improving reading experiences. As is evident from the snippet of the discussion above, designers are encouraged to apply the principles of hierarchy, sequence and consistency of visual trace in web design for a better use of new mediums.

Hierarchy

When talking about the visual hierarchy of layout design, the grid is the structure that bounds the whole design together. In the layout, the grid keeps text and images in position, as is the rule that every placement conforms to. The invisible threads keep text and images in place. Usually the clearest grid is visible in text-only publications, such as a calendar for example. The grid-based design is also evident in newspapers. As new generations of computer users grow up in a media-rich environment, space must be contributed to grand narratives, which has created some paradoxical problems. For instance, readers tend to be cautious when their focus and attention is shifted from news content towards advertisements. A lot of space is dedicated to advertisements, which is an understandable phenomenon, but this should complement the layout of everything else. When the online news website becomes a commercial product, visual reliability and hierarchy must be taken into account the design considerations more than ever.

In the case shown above (see Picture 1), the advertising element takes over half of the window. Furthermore, it is an advertising video. Advertising is usually part of the page view in an online newspaper, but for the analysis here, more pertinent to the discussion are the questions of: how the visual trace could be improved or produced; what changes designers could make to realize

the transfer (from print papers to screen); and how narratives might be digitized to guide a reader's attention. In my analysis, video adverts are not that common in *taloussanomati.fi*; dynamic advertising banners are used instead. In addition, the right side of the window always features an advertising banner. In news websites, grids are designed to include various advertising elements. Victor Papanek said, "Design is the conscious effort to impose a meaningful order." Typographical signs and elements are regarded as atoms to affect the visual hierarchy of the layout, as well as different units of layout, including the unit placement, colour and visual modality. Multimodal images are obviously higher in the order of importance within a context (e.g., text-image context). A good layout shows the designer's and publisher's personality. Today, computerized and digitized techniques produce hierarchic structure almost automatically. In this sense, it is the editor's and designer's responsibility to balance and perform the distinct character of the newspaper by establishing an outward appearance. In the case of *taloussanomati.fi*, there are quite many colours in the website, aside from the advertisements containing multimodalities. Besides, colour serves to differentiate and to connect, to highlight and to hide, but too many stimuli distract people's attention, rather than focusing it where it should be.

By marking space into numerous equal units, the grid makes the entire page available to use and easy to read (Lupton & Philips 2008, 175). As well as the text and the images in the layout, the grid also dictates the scope of what is left and the white space between different units. On the *taloussanomati.fi* website, the background colour is dark grey and the main body is white, with a dynamic advertising section at the head, and a side ads banner. As Engelhardt (2007) suggests, every graphic space into which these objects are arranged is meaningful. In this vein, the "white" spaces between the units fail to free imagination, but create more burdens, so that the "white" distracts attention in another way.

As Barnhurst and Nerone (2001) point out, the persisting visible structure of a newspaper is that the form of the newspaper should be recognizable. Not surprisingly, this form has not yet been realized in online news websites. This can be proven through Pulkkinen's (2008) notion that there is little hierarchy in the news presented on the websites. What I try to focus on are the problematic elements, including grid and colour, which might influence the structure of online newspapers. It is the physical arrangement of hierarchic elements that partially allows newspapers to create their own ideal. In what

follows I explore the other two disciplines that design practitioners take into account in the construction of newspaper identities.

Sequence

If a complex hierarchy of units (advertising banner, news sections, columns, photos, and other components) define the horizontal axis of reading orders and empower readers to arrange the reading and information processing orders, then a sequence constitutes the vertical axis of story reading by clicking the hyperlink (text, images, columns, menus, highlighted parts and the like) to different web pages. Paivio assumed that smaller units are organized into larger units in a sequential or successive fashion (1986, 61). Readers may prefer deciding themselves what to read and how to read. The designer or editor's role is to facilitate news navigation, so that it helps readers to decide what the most interesting news/item/thing is, and assists them in finding the subjects that relate to their interests. This is something that can be partially achieved by a good hierarchy; at the same time, the sequence eases reading one step further, whereby articles are trailed and the structure is laid bare. Without sequence, the online news website is dead. The web designer's job is to make sequential layers simultaneous, unfolding multiple layers of image and text, even sound or video, in time (Manovich 2001).

The idea of sequence is closely tied to the architecture of a website, coming from the physical world. It maps the construction of the website design, employing overlapping layers and associating different levels of data. Like the text-image relationship, these layers also maintain their own identities, and contribute to the whole.

Consistency

The visual language of a publication shows how the publication sees the world. A good publication is detail-oriented; the audience requires a coherent experience. Part of the graphic designer's job is to maintain the visual consistency of the entire design – that is, to keep a clean, clear, and single visual language.

Creating a perfectly consistent visual language is not particularly easy. It requires skilful art direction, and careful editing ideas. A sound understanding of the process leads to good visual legibility, propelling the visual “story” by working out how photos are shot so that they correlate with the story, and establishing every scene in the photos and the ratio of the white spaces that are

left between different units. Every detail makes sense. As to the text-image relationship, consistency is emphasized more than ever since there are referential connections between the verbal system and the nonverbal system, though they can both work independently (Paivio 1986).

One characteristic of the *uusisuomi.fi* website is that the main story photo is the biggest and occupies the topmost location, while other photos are squeezed with texts into a much smaller size (see Picture 2 and Figure 2). In this reading, every website aims to establish its own unique visual language, so that it is distinctive and can be recognized by its readers instantly from a wider collection of layouts. In addition, the consistency of visual language aligns with the text-image relationship. Even though there is no specific photo for the news story in Picture 3, the imagery system constructs novel representations that do not correspond directly to contiguities of experience (Paivio 1986, 82). After reading the title of the story, we get the general picture of it, and we can imagine the interactive image even though we have never seen such an event. Can we therefore conclude that the *uusisuomi.fi* website has somehow created a successful interface language?

The answer is of course no. Users are able to acquire new cultural languages from many different details, including what one particular element is positioned next to. Looking at the news from the same day as Picture 2, Picture 3 shows two top stories listed below the main story section on *uusisuomi.fi*. In the middle news section, the photo and the text are top aligned, as well as bottom aligned. We can see this phenomenon frequently in the whole website layout design, as dictated by story length. If all the elements are regarded as different visual units (Figure 1 and Figure 2), then a set of graphic objects can be combined into a meaningful arrangement, together forming a single graphic object at a higher level (Engelhardt 2007). Randomly arranged constituents, for their part, may cause a collapse of eye tracking in reading. A sudden departing from the grid breaks the whole consistency of the layout. The lesson is clear: every part of the layout exists in the context of the others, no matter how long and how wide the layout has been constructed.

Conclusion

Steve Duenes once said that the infinite space available on a website is both a good and bad thing (Losowsky & Bolhöfer 2010). It is good to have as much space as we want to publish as many things as we like, but the finite space of the

Kansanedustaja: Isien kannustaminen kotiin ei poista "aitiriskiä"

KOTIMAA | KEHYSRIIHI 2013

↑ Picture 2. Screenshot of uusisuomi.fi website layout on May 3, 2013.

The main story section of the day.

↗ Picture 3. Screenshot of uusisuomi.fi website layout on May 3, 2013.

Polkupyörällä liikkunut mies ahdisteli lasta - Poliisi: Soita, jos näit tämän

KOTIMAA

newspaper forces us to edit. When newspapers become digital and have as much space as they want to publish, what do designers or publishers learn from the experience? As has been shown, the problem faced by Finnish online newspapers, at least the earliest incarnations (*taloussanommat.fi* and *uusisuomi.fi*), seems to be that there are some issues in the text-image relationships and their multimodality, and in the failure to make use of the characteristics of the new medium in order to improve. In addition, a news website's actions relate to its actual performance, especially when faced with the fierce competition coming from opponents.

As Boczkowski stated, "... [Because] what's important to [the potential users] was to communicate among their group and to put a face of their group to the outside world... It wasn't about technology, but about communication" (2004, 147). Therefore, it is clear that we need to draw on social semiotics to revisualize news practices from merely gathering all the information and fitting it into different settings. Communication should be the core issue for visual editors, especially when online news is examined for its credibility due to information flooding and rapid dissemination. In this sense, traditional print newspapers are still unbeatable as a source of authority. The solution for online news sites could be focused on how to make use of the new medium and multi-

modalities, rather than copying from other sources and applying what is copied to the website. The demanding requirements for visual designers are crucial in the process of remediation of the media. By analysing representations of online newspapers, the importance of increasing visual editors awareness of hierarchic, sequential and consistent design traces is raised, so that communication is accomplished by the representative dimensions of web news.

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EDITORIAL CREATIVITY IN NEWS WEBSITES

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CHAPTER 5

Shaping Information Structure of Graphics in Online Journalism

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Shaping Information Structure of Graphics in Online Journalism

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Abstract

A principal focal point of communication design in online journalism concerns graphic structure when creating visual elements on news websites. This paper proposes a framework focused on developing knowledge on how aesthetic inputs create information salience, with implications that rely on visualisation from a multimodal perspective, now that combinations of modes have become commonplace in online journalism. I set theoretical distinctions with information designs to clarify the ways in which visual composition gives rise to information salience, thereby enhancing the meanings embedded in graphics. Following a multimodal perspective, I begin at a fundamental level concerning the reliable relationship between visual components, then systematically approach the visuals on three levels: nodal point, articulation, and communication environment. I will show that this is a basic step toward understanding the focus of design as a constructive engagement in visual-journalism analyses, rather than a developed form of craft.

Keywords: graphic structure, visual journalism, graphic representation, multimodality, news websites

Shaping Information Structure of Graphics in Online Journalism

Introduction

Notions of Information Structure in Graphics

This chapter is concerned with the application and usage of the functional concept of graphics nowadays in online journalism. It aims to analyse the total meaning constructed out of combinations of text, visuals, and layout. For some time, communicative modes, media, and situations have been discussed with respect to multimodality (Bateman, Delin, & Henschel, 2007; Kress, 2010; Bateman, Wildfeuer, & Hiippala, 2017). Here, I relate multimodal thinking to the notions of information structure of graphics in terms of functional and practical graphic usage in online journalism compared with traditional newspapers¹. I show how the phenomenon of information structure of graphics requires an extension of multimodality, not only over and above traditional usages of graphics, but also with respect to the more aesthetic constructs employed on the online newspapers that are trying to comprehend both printing and digital.

My particular motivation in attempting this extension of the meaning of graphics' information structure is as follows:

For a long time, we have been experiencing the web's impact on newspapers and their newsrooms, as well as the interrelations between news audiences and online media. The change has been labelled Journalism 2.0 (Muhammad, 2008), a meta-medium of digital computers (Manovich, 2001) and multimodal characteristics (Pulkkinen, 2008; Thiel, 1998).

During this media revolution, communication design often has been viewed as craftsmanship,

101

¹ According to Merriam-Webster, it is important to notice that in English the "newspaper" refers only to a paper version or the organization behind it. But I wish to separate newspaper and online newspaper, so the term "traditional newspapers" here refers to printed newspapers, as opposed to online newspapers.

but the influence of graphic design on media has been recognised, i.e., this regime has begun to shift, albeit slowly.

Especially in the journalism field, the relationship between journalism and design is a difficult path to chart. On one hand, journalists respect the eyewitness approach to the truth, using an objective tone to share what has happened to readers (Harcup, 2009). On the other hand, the expertise of “crafting” visual representations has undergone revolutionary development (Alfredo, 2009). Visual journalists have become familiar with visual-information representation in terms of its functionality, rather than its content (e.g., photos, videos, and graphics). This includes mediated ideation from visual practitioners, as well as newsrooms.

This article mainly talks about two forms of communication design, respectively layout design and navigation design. The discussion on the link between journalism and these two design practices has elicited an important consequence, in that “craft” graphics are not made up of discrete or unrelated instances. Both the textual-visual relationship and cultural context must be considered as varying continuously and simultaneously along a variety of dimensions during the visualisation process. Therefore, in moving to multimodal thinking in online journalism, I began to consider the *system* with respect to how such graphics vary and the consequences for realising the information structure of graphics – in navigation and layout – that multimodality elicits. It is only when we can place individual graphic elements against the general background that we can go on to discuss the emerging relationship between visual components, and even the constructive function of design in online journalism.

Similar ideas were concerned by Kress and van Leeuwen (2006) when they made research in visual communication from a social semiotic perspective. Yet what visual journalists do is closely in relation to journalistic values. They must move within a spectrum that involves news values at one end and communication design principles at the other, as they shall not either supplying a plethora of figures and facts without aesthetic values or, at the opposite end of the spectrum, employing aesthetics regardless of facts and numbers. Consciously situating their work ensures that we would not be confused with the border between communication design and visual journalism.

Why Visual Journalism?

Journalism – as a coded, professional practice – establishes a cultural and social order. Although the new media environment has eroded the distinction between news and entertainment (Williams & Delli Carpini, 2000), optimistically its emergence provides new opportunities for the public to multiple axes of information as well as alterations of news representations. In practice, the journalistic attitude is applied not only to information, but also in multiple areas outside the journalistic field. For example, data analysis has gained increasing prominence over the past few years in news representation (Appelgren & Nygren, 2014). In addition, scientific knowledge and social events rely on information visualisation to be accepted by the public (Anderson, 2017).

For the purposes of this article, we can see visual journalism as a hybrid form of a journalistic practice, one that was once unconsciously fused with other disciplines in the newsroom. It includes multiple creative practices, such as information design, layout design,

and photography. Taking this as a starting point, my understanding of “visual journalism” consists of aesthetics instead of a discussion within a realm of written words. Visual journalism considers readers’ sensibility and maps multimodal genres in digital newspapers instead of being an art form, which evokes its communicative effectiveness compared with traditional newspapers. Understanding what goes into visual composition is critical in determining how efficiently the practice will be executed, as Ware states:

Design graphic representations of data by taking into account human sensory capabilities in such a way that important data elements and data patterns can be quickly perceived. Important data should be represented by graphical elements that are more visually distinct than those representing less-important information. (Ware, 2012, p. 140)

It is noteworthy that we are now facing a visual shift to a multimodal landscape (Jewitt, 2009): language is only ever one mode nestled among a multimodal ensemble of modes, and all modes that are a part of a multimodal ensemble need to be studied from different perspectives, such as the underlying implications available in communication and the potential meanings in the context. Influenced by this particular meta-trend, discovering how to perceive graphic structure is what I intend to illustrate next. In one approach, different aspects of communication – such as colour, texture, motion, and typography – describe how we conceive information visualisation through the meaning of modes, as well as the overall meaning of the neighbouring relationship and sequence (e.g., Harris & Lester, 2002; Ware, 2012). In another approach, Kress and van Leeuwen (2006) analyse visual narratives from a

social-semiotic perspective, as composition or perceived relationships between elements in an image create meanings (Kress, 2010, p. 59).

The graphic structure on news websites is managed by creating composition, which conveys information, as well as pleasure or persuasion, by means of the information (Brusila, 2014; Hollis, 2002). One of the many purposes of constructing visualisation is to communicate news stories more efficiently. Drawing on social semiotic theories of multimodality, I examine several conventions, such as navigation design and layout design. Transforming information design from print to digital thinking is suggested to create a sense of objectivity and visual similarity, as the data should be perceived “at a glance.” Meanwhile, looking through visual cases in the structure, such as interrelations between text blocks, images, graphics, and other materials, can be beneficial in understanding visual journalism as a meaningful space, instead of merely an accumulation of visual objects. Such considerations emerge within the boundaries of aesthetic field and social semiology to analyse graphic representation precisely. This can be achieved by breaking the structure into packages and sub-packages using different categories as graphic artefacts, so that it can be more useful, relevant and shareable for readers.

Present Study’s Goals

As I have suggested above, my main goals in this article revolve around the information structure of graphics on news websites. I will show how, in specific examples of Finnish online newspapers, we can set about describing graphic artefacts in various categories to take the next step in looking for empirically motivated characterizations of their

inner properties. This corresponds with Bertin's (1983) reading operation, which explores outwardly to social and cultural situations, from signs and meanings within. And yet, with multimodal thinking at news websites, designers' plates are full, who must retool and diversify their skill sets to produce proper visual journalism.

Undertaking research that looks beyond language in papers across digital platforms can be rather overwhelming in creating graphic representation, as the theoretical tools and frameworks in this field remain unsettled. Meanwhile, much consideration tends to focus on technological artefacts or audience theories (Holt & Karlsson, 2011; Muhammad, 2008) due to the application of human-computer interactions (abbreviated as HCI). However, I want to go in another direction and suggest some aesthetic aspects of graphic artefacts in which the espoused values might be hidden or are not necessarily emphasized as they once were in print media.

New visual representations are developing very rapidly as new forms of expression are attempted using electronic techniques, and old expressions are changing under the influence of these new graphics. With multimodal thinking, addressing the information structure of graphics in which new and old forms merge is a complex process. Meanwhile, individual graphic artefacts are sometimes considered isolated from the context. These make it essential to have a systematic framework for addressing the information structure of graphics individually and collectively, despite newspapers' apparent adaptation of multimodal graphics on their websites. Even though the prominent web-based graphic offerings conform well with online visual guidelines, the way to utilize them on news websites is to structure a rich body of graphics. So, the discussion will show how the

information structure of graphics is designed to deliver information salience, as it facilitates visual stratification to identify news value. I want to discuss the topic – not because I discovered something new. Discussion is needed because the landscape has changed, and little has mentioned the new reading strategy in the web-news field. I will discuss in more detail later about how graphic structure is used to create meaning in terms of graphic representations, and what kind of narrative indications it creates.

Toward a Reliable and Contextual Relationship

Considering combinations of different forms of communicative visualization, visual media have attributes that distinguish them and influence our approach to their application, such as static images (e.g., photos and illustrations) and dynamic visuals (e.g., videos, films, and interactive media). We can observe that researchers have succeeded in making sense out of these multimodal communication situations in different categories: typography, graphic design, information graphics, diagrams, audio, and motion, together with interactive multimedia (cf. Harris & Lester, 2002; Bateman et al., 2017). Some researchers have mapped the basic foundations of understanding multimodality, suggesting “visual grammar” in terms of colour, typography, and movement (cf. Kress & van Leeuwen, 2006; Pulkkinen, 2008). Meanwhile, Engelhardt (2007) makes a major contribution toward unpacking the visual syntax from the diagrammatic mode’s structure. Whatever way we approach this analysis, there is a particularly critical challenge in shaping graphical-data structure in online

journalism. Considering contextual relationships in visual structure is essential to building the capacity to distinguish different visual forms.

Explaining the visual language of online journalism can be complicated, as a broad range of multimodal ensembles generates different means of expression. What seems to be apparent for readers is that linguistic modes are no longer enough to create a multimodal reading experience. In a series of books and articles, Kress and van Leeuwen have shown convincingly that: firstly, linguistic modes of communication have been confronted by other related factors, such as visual artefacts; secondly, social conditions are changing certain communication features and dismantling different representational and communication potentials of visual modes, such as electronic technologies and cultural meanings (cf. Kress, 1996; Kress & van Leeuwen, 2001, 2006). Correspondences between communication modes and language have been noted for long. What's more, the societal praxis endowing to representations has formed the basis of the study of contextual relationships between different constructs. Therefore, when researching visual structure, it is now mostly taken for granted that graphic representations, in communicative visual systems, have been constructed by objects, their properties, and the information they contain (Bertin, 1983; Brusila, 2014; Engelhardt, 2007; Kress & van Leeuwen, 2006).

The new media environment has allowed news to be more social and participatory, and this has led to profound effects on discursive ethos in online journalism, not alone in the visual representation field. The reason why I think individual visuals in the creative process are only partially considered and should be considered in the specific social context is that they could be expanded heuristically by incorporating such requirements in collectives (Kress

& van Leeuwen, 2006, p. 177). The schema does not generate a representation automatically; the cognitive procedure needs a context for a mental operation (van den Boom, 2015, p. 88). The challenge is to go beyond the medium and investigate the relationships between modes (Jewitt, 2009). Therefore, there is a need to look more closely at the context of the design practice to identify its heuristic significance in digital platforms.

Taking the exact conditions of production for multimodal artefacts seriously enables a more realistic and logical appraisal of the precise motivations for constructing the information structure of graphics. There are various layers in web-news visualization that convey information, in levels of reading and amounts of visual components (Zha, 2016). From the moment that we define meanings in these information components, and before any attempt is made to interpret the visualization, it is essential to establish relationships that a reader effectively can perceive between different components and layers. Here, I suppose that there is a hierarchical relationship in the three layers: nodal point, articulation, and communication environment (Figure 1). On the elementary level, we interpret nodal points, such as labels, images, or texts, which are collected in their specific context. However, nodal point conveys no meaning without prior understanding of the specific information environment, while the environmental context relies on acquired colours, texts, labels, or images for recognition. Reliance among nodal points constitutes the meaning potential of semiotic components in the context, forming a bridge with the communication environment. Articulation derived from connecting nodal points and communication environments is not easy to define. However, from the existing forms of articulation, we can see that online news is present to allow interaction and engagement on a dense news platform. On such a news

website, information value, salience, and reading are not necessarily linear. Readers are welcomed to think more about the meaning of visual components.

I interpret the three stages in the reading process of visualisation as a successive operation: external identification, internal identification, and perception of pertinent correspondences (Bertin, 1983). My perception of the contextual relation of nodal point and communication environment relies on Bertin's image theory (1983), but he did not consider the relationship between the two in a digital format. If we want to understand the way in which visual consistency in the process of signification is realised in online journalism, a theory of reading strategy in print media is no longer sufficient and must be complemented by a discussion that makes the principle of reading visualisation explicit in multimodality. This helps describe, for instance, whether the interpretation of digital aesthetics is interfering with nodal points in linear coding, as I will try to do in the next section.

Sketching the Layers of Reconceptualising Online News Visualisation

Nodal Point

Following the premise that technology addresses us as people, changing not only our relationship with news media, but also how we perceive ourselves (Turkle, 1995), it is noteworthy that more representational and interactive meanings of visualisation are produced in transforming print media to digital as part of the culture. It demonstrates that visual journalists' toolkits are more powerful and able to "visualize the non-visual" better (Engelhardt, 2007), indicating that visuals are becoming more meaningful in responding to

the emergence of new media in online journalism. Visual components as nodal points are tied to what they represent, which shape how they can be constituted in the communication environment. Therefore, the graphic structure is marked as a collective of nodal points parallel to their meanings and within the whole web composition. By identifying the meanings within the graphic structure, visual components become indicative in the context. If we examine the visualisation in a meta-context, it is obvious that nodal points inside provide more insights about the layout narration, rather than refer to unilateral understandings or properties.

Therefore, it is assumed that visual components in online journalism are not discrete in their context, and that the proximity between nodal points and communication environments in online journalism is worth highlighting. The motivation to apply visual components to people's aesthetics stimulates various nodal points. Meanwhile, the capacity of these nodal points leads to a further understanding of aesthetics in a digital format.

In this sense, aesthetics in print media influence digital visualisation in online media when considering development of technical infrastructure and skilful techniques. For general aesthetic pleasure, the golden mean (e.g., Harris, 2007) is one of the most widely applied principles of composition in design practices. Designers have used it for centuries as a rule to avoid placing visuals arbitrarily (Brusila, 2014). Nowadays, however, further requirements in online journalism have emerged in this field to influence the digital technology's effects on people's aesthetics.

Articulation

Nodal points are functionally and practically applied in the specific communication environment (it refers to the web environment in this article). But to which nodal points do we connect the corresponding objects? If we wish to regard a news webpage as a sign system, how can we look for coherence between different nodal points present in digital visuals?

By shaping reality into a news story, journalists reinforce and reflect the public and society, and they operate the news structure like traditional storytellers (Bird & Dardenne, 2009). But employing stories in online journalism to engage readers is not any less complex, even with today's digital innovations, in that online visualisation is not merely presented by an accumulation of nodal points in a chronological account, but "seeks coherence and meaning" and "exists within a cultural lexicon of understandable themes" (Bird & Dardenne, 2009, p. 207). Therefore, the articulation between different nodal points and layers needs to be decoded in multiple ways as follows.

On one hand, digital aesthetics as articulations work as reading navigation when clicking from one nodal point to another, or from one layer (webpage) to another in the communication environment. For example, in a dot map with numerous equal-size points, the pointed dot is emphasized when the mouse is hovering on it. The point then is highlighted, either in colour or in size, among all other points of equal size. In this case, potential digital variables make the map comparably more meaningful. The digital variables are much less determined in Bertin's book, as he assures that such property in graphics "seems to lengthen during immobility and contract during activity" (Bertin, 1983, p. 42). Another instance is in Figure 2. When the mouse hovers on 'Today' (Finnish word: 'Päivä'), the subsection is

highlighted in light grey. There is a *dual* perception here: of contrast (ratio of colour or size) and of consistency (to the meaning that the visual can be added). The changing size or colour of the nodal points and the meaning endowed onto the digital movement are completely interdependent.

On the other hand, digital aesthetics allow for virtual interaction. The presentation of the above dot map poses a possibility of engagement and involvement. This exists not only in various nodal points, but also between different sections, webpages, and websites. Today's online newspapers require consistency in visualisation that may help readers identify the brand. Here, take *Lapin Kansa*² as an example, as it just rebranded its website to provide readers with enhanced visuals. *Lapin Kansa*'s logo is mainly blue (Figure 3), can be seen all over the website, and is highlighted in every important section, including 'Most Popular News' (Finnish word: '*Luetuimmat*'), 'Video', 'Latest Free News', (Finnish phrase: '*Tuoreimmat maksuttomat*') and other sections (Figure 2 & Figure 4). In this sense, the meaning is doubled, as digital aesthetics stimulate both density and dynamics visually. This seems to be a good solution for a visual transmediation when considering the accumulation of information, and not just for HCI's sake.

Thus, articulation determines which nodal points are exposed to the corresponding communication environment. Defining an articulation, such as utilizing a digital variable or inserting a hyperlink, requires examining how nodal points, within the communication setting, connect visuals and create meanings. In a sign system of online journalism, articulation works like a signal to connect individual nodal points and layers.

² *Lapin Kansa* was established in 1928 and is based in Rovaniemi, Finnish Lapland. Owned by national Alma Media Group, *Lapin Kansa* was considered the biggest subscription newspaper in the Lapland region.

Communication Environment

Communication among individuals in a socially distributed system is always conducted in terms of different artefacts (Hutchins, 1996, p. 284). Visual components are emphasized in this way, as they are connected by articulations to clarify news information and to refer to meanings in the information structure of graphics collectively.

From an observation of today's online journalism, we have seen that it is inadequate merely to offer navigation to improve designers' efforts in delivering visualisation to readers. The difficulty we face in digital development is to become a nimbler, digitally focused newsroom that thrives in a landscape of constant changes. Not only do competitors make journalistic practices more complex, but readers' aesthetic growth also raises the bar for visual journalists' efforts. Attractive news websites must not start with a clean slate:

We have preconceptions, and we can compare the system with other interactive systems that we have experienced, seen, heard, or read about, noting familiarities in the graphics, organization, layout, soundscape, etc. We have a mental model of the system, based on other systems that existed already before the interaction begins. Our intuition guides us to start experimenting with the system. Earlier experiences build our confidence, and this kind of exploration makes the interface seem more transparent. (Knuutila, 2013, p. 168)

Therefore, prior knowledge of the terms in Figure 1 would entail acquired understandings when reading visualisation. It explains how visualisation can be integrated seamlessly with prior aesthetics, yet at the same time, it possesses a specific graphic structure and entities afforded by visual modalities. I realise that most newsrooms have their own

visual guidelines when conducting research in Finnish newsrooms. For instance, in locator visualisation, the visual team takes a common-sense approach to what colours are available for the paper and what font or size is suitable for the website. Investigating how pixilation is used on different platforms and how limited pixels affect visual placement has confirmed some of the guidelines. Unifying all nodal points and details to represent the quality and magnitude of the newspaper's brand is a method that the visual department employs in the newsroom. It produces a particular communication environment for readers, by which the reasoning of visualisation can be traced. In this case, the communication environment also removes ambiguity in recognition.

Having conceived of both the nodal points and articulations, readers are ready to perceive pertinent aesthetics on the specific website. In this sense, the conglomerates do not simply manufacture news content. Readers' experiences (*The New York Times*, 2014, p. 60) also may result from a tightly organized and concentrated arena of visual structures that unfolds within the conglomerates. These new media criteria differ markedly from traditional newspapers, specifically in interactions, conceptual tactics, cultural expressions, and visual strategies of the newsroom workflow. Though it is difficult to observe every detail in conglomerates, many points of access are available, as I have discussed in this paper. The shift to three layers – nodal point, articulation, and communication environment – is a commencement of reading the information structure of graphics present on news websites.

By observing the contextual relationship between the three layers, I try to re-conceptualize the categories and dynamics in reading visual structure on news websites. The

relationships between the three layers, however, are not linear, as meanings are defined and redefined in the process of constructing visual dynamics, especially in a multimodal environment. For example, Point A is connected to Point B by Articulation C in Environment D. Meanwhile, B, situated in Environment F, is also contingently articulated to C in the same environment. This creates integration of reliable and contextual relationships, instead of discretion in visual components. According to this view, it enables readers to retain online journalism in a comprehensive manner, as we cannot isolate any individual graphic and create a mind map for the least-meaningful element based on “the component.”

By “dynamics,” I mean that the visualisation is not static or linear for two reasons. First, the forms of nodal points are diversified as texts, images, and other visual components, carrying a communication message and conveying information. In this situation, individual interpretations always are open to reinterpretation (Werning, 2013). The integration of digital aesthetics enriches visual components in representation, as well as meaning. Secondly, compositional layers, which constitute various nodal points, are not simply sorted in a linear sequence. The sequence of layouts is arranged by designers for both aesthetic and communication purposes in digital art. Serious consideration of aesthetics in design practices is indispensable in social and cultural ways (Bardzell, 2011).

Visual-Representation Examples of News Websites

As discussed in the above sections, a reliable and contextual relationship is developed between visual objects when considering the conditions of producing multimodal

artefacts in digital visualisation. The design work during the process is to find a compromise between many competing and sometimes conflicting constraints. I think the reasons why social and cultural practices affect understandings of graphic structures, which further influence conceptions of information salience, can be traced to constraints framed by newsroom practices and the possibilities created by technological potentials.

The relationships between social and cultural practice, the three layers of online visualisation, and the extended notions of multimodality in news websites are depicted in Figure 5. The ideas here are not brand new, as visualisation relies on and is constrained by materiality (Kress & van Leeuwen, 2006). The three notions of re-conceptualizing online visualisation on news websites rely on particular social and cultural practices, but they have the potential to expand when deploying multimodality or constructing artefacts in a different way. The variability is compatible with the results elicited by social and cultural practices, e.g., the technology applied in the visual production. This can be found in the differences in graphic design among traditional newspapers and the digital aesthetics of online journalism.

To depict how visual composition gives rise to information salience in digital aesthetics, I start by analysing the reliable and contextual relationship, then approach the information structure of graphics on news websites by describing the three meta-concepts: nodal point, articulation, and communication environment. In the following sections, I provide two visual-representation examples. First, I analyse how the concept of nodal point, as evoked in the discourse on news websites, is divided into two categories containing outcomes and inspirations of digital movements in multimodality. Second, I contrast the different versions of a piece of information design practiced both in print and on digital

platforms. This involves understanding the visual representation of information graphics as something generated through its interrelatedness with both visual-production guidelines or constraints and the online aesthetics that it moves through and of which it is a part.

To read visualisation in online journalism is to proceed, more or less, through individual nodal points in configurative spaces. For clear knowledge of graphic structure in the successive three levels (nodal point, articulation, and communication environment), one can view Figure 6 as a general overview of visual presentations and narrative indications in nodal points on news websites. The aforementioned visual cases are distinguished based on The New York Times' *Innovation* report (2014). In the figure, some of the nodal points only function as visual narratives, while others involve implications.

In terms of narrative indications in nodal points, implications have appeared in different categorizations of the sign system, which covers eight visual components with three functions: spatial and temporal management, archive attribution, and story property. The first two streams describe the perceived value of digital innovations, and flow into a composition of various forms. The last conforms with the sense-making process of journalism, and it is modified to comply with digital structure as well.

When I was conducting ethnographic research in Finnish newsrooms, I discovered that visual journalists, especially those who are doing infographic designs, usually are very quick when responding to breaking news. They knew how to use visual language in the timeframe, including what nodal points would provide the strongest information in telling the story. The visual guidelines they must follow also facilitated their capacity to handle visualisation during breaking news, and I will come back to this issue later. The practice itself

showcases spontaneity and creativity. In the process, visual journalists have succeeded in capturing the dynamics of nodal points within the newsroom culture. The practices revealed spatial and temporal management in their routines, which identified timeliness and geographic factors in news for readers. The two factors might be the most influential and distinctive motivations in visualisation, especially when delivering breaking news.

With archive attribution, news photographs and story archives are common cases in narrative categories. This stream reviews how to easily perceive the story through the benefits of digital innovations. Most news websites have a news bank with a practical and functional manner. Another stream in narrative indications is story property – respectively, story type, story thread, and story tone. They focus on the journalistic value of news and reading habits through which readers perceive news stories. They are categorized efficiently due to the intended involvement of digital movements on websites. After all, the three properties (story type, thread, and tone) enable functional consequences and values that readers associate with news.

In online journalism, as a communication environment, visual journalists apply each nodal point differently according to the specific function, either in visual presentation or in narrative indications. For example, individualized service is applied for localizing news websites accordingly. Consider a news website that features stories based on readers' appetite and location. In addition, corresponding to narrative indications, there are also many visual presentations on news webpages. The most common visual artefacts are as follows in recent news websites: column, text, images (including photos and illustrations), header, logo, grid,

main content, sidebar, footer, and ‘whitespace’. Nodal points are realised by different visual representations that make up web-news visualisation.

The other visual representation is an example of restructuring graphics in visual transmediation, from print to digital platforms. In a sense, it helps us go far beyond just evoking the discourse when analysing the information structure of graphics.

In Figure 7, an image from an infographic designer who works in the *Helsingin Sanomat*³ newsroom, we see the same infographics (about the influence of the Transatlantic Trade and Investment Partnership, known as TTIP, agreement) diverge into three versions: original print version, original digital version in two pieces, and a digital version combined with print. Considering the visual representation, the designer “deducted” how the contextual influence affected visualisation in different platforms. These choices relate to the sizes of the infographics. The two separate pieces should be merged into one image, as the maximum width of the digital platform is 560 pixels. This is why the original digital version in two pieces disagreed with the mobile and website platforms. As to the interactive meaning, it is reasonable to read the infographics with the combined pieces, as people get used to flipping upward when reading on screen. Meanwhile, when reconstructing graphic artefacts in digital versions, designers need to reconsider the meaning of composition. The digital patterns do not exhaust the relationships set up by the original print version, but there is a new variable – the way the visual artefacts were connected in a fixed placement. The arrows looked more

³ *Helsingin Sanomat* is the largest subscription newspaper in Finland, considering its circulation (Lehtisaari, Karppinen, Harjuniemi, Grönlund, Lindén, Nieminen, & Viljakainen, 2012, p. 21). It is important to recognize that nowadays both *Helsingin Sanomat* and *Lapin Kansa* are tabloid sizes, not broadsheet as newspapers are traditionally understood. Although in English usually broadsheet newspapers are considered as quality papers, both examples from Finland are quality papers even as tabloids.

salient than the ones in the original versions. New values embedded in visual modes would have been transpired. Visual representation on news websites is composed of static visual artefacts, yet in a different way from traditional media. On today's news websites, the placement of artefacts endows individual visuals with informative values relative to each other, which may influence information salience. This is why we need to re-structure graphics, and even re-conceptualize the information structure of graphics, when digital aesthetics interfere with our prior experiences of traditional media.

Looking more closely at the visual-representation examples in this article, I mainly emphasize two kinds of design practices: layout design and navigation design. The instances are not intended to be exclusive, as there are many other aspects of multimodality applied in the visual transmediation from print to websites, such as linguistic and content fields. From the perspective of visualisation, however, these two kinds of information graphics will be unreasonably related to digital aesthetics. I do contend that the characteristics addressed in the visual-representation examples are reflective of the new possibilities and challenges for the appearance of online news visualisation. Layout design refers to the communicative modes on the webpage, as well as their hierarchical relationships, while navigation design frames the ways in which intended artefacts and layers are connected. Actually, both practices have been discussed for long in visual communication, but digital aesthetics invite us to understand the information structure of graphics as being produced and consumed as part of the experience of a multimodal environment. To understand how to produce proper graphic structure in such a visual transmediation is beneficial for delivering news value, as

well as information salience. From this point, it is natural to suggest a reconceptualization of the ways that visual artefacts can be classified.

Conclusions

To analyse visual modes on news websites, webpages in online journalism can be coded more precisely as layers with different composition (Zha, 2016). Observations have demonstrated both reliance and discretion in the analysis of visual components in online journalism. Two main levels of understanding are, first, iterative visuals, observed to be interdependent throughout the whole website, while consistency and sequence are observed throughout different webpages. Second, designers have tried to apply different methods to realise digital movements from this visual to that visual and from one webpage to another (nodal points), which are connected by articulation to support website construction (Figure 1). In this sense, the two key concepts, namely nodal point and articulation, stand out in the specific communication environment.

Within news websites, the realization of the information structure of graphics is predominantly devoted to the integration of different visual modes. The composition is then an overarching conglomeration consisting of individual nodal points whose meanings provide the logic of the communication environment. On the other hand, digital visuals provide meaningful narration when readers perceive the visualisation. As far as salience is concerned, we note that moving images are constructed by static visuals, and we provide greater stress to the visual meanings behind them than to the visuals themselves. Therefore, digital aesthetics

are mediated by technological effects and work as articulation in that context. After all, visual journalists create information salience by making different multimodal compositions.

This work evokes a discourse on the information structure of graphics in online journalism, in terms of constructive components in visualisation. For me, understandings of visualisation are not completed in traditional media, as it is time to treat multimodal forms of visual communication that employ graphics as seriously as print media. But it can be activated when situated in an online reading setting because the properties of visuals carry prospective values in a digital format. The practices of representing visual components enrich meaningful spaces, then elicit opportunities to thicken the information structure of graphics on news websites. Therefore, it is essential to consider the graphic structure as a whole when defining the consistency of visual composition and analysing visuals on a digital platform where information is conveyed.

In addition, the distinctiveness of this paper not only points to defining the hierarchical categories of graphics. I also focus on how the characteristics of digital aesthetics interfere with prior experiences of visual production in traditional media. It shows that, however similarly concerns and orientations are derived from the journalistic field among others, social and cultural influences affect the understanding of graphic structure, which derive different information salience in visual transmediation. In this sense, thinking about visualisation from an empirical perspective has become an active act of participation in new media, especially for visual journalists in the field.

With these aforementioned developments and changes in the newsroom, the aesthetic inputs by visual journalists are re-shaped in multimodality. The situation has shed

light on how the use of digital innovations has occurred in visualisation practices from a designer's perspective. I have found that previous understandings of traditional media are insufficiently applicable on news websites. Nodal points are transformed into new ones and are enriched by digital aesthetics in the specific communication environment. In this sense, visualisation practices are reconstructed and reshaped, which address more meanings in the process. Therefore, the findings here may benefit future design work by improving practices in newsrooms.

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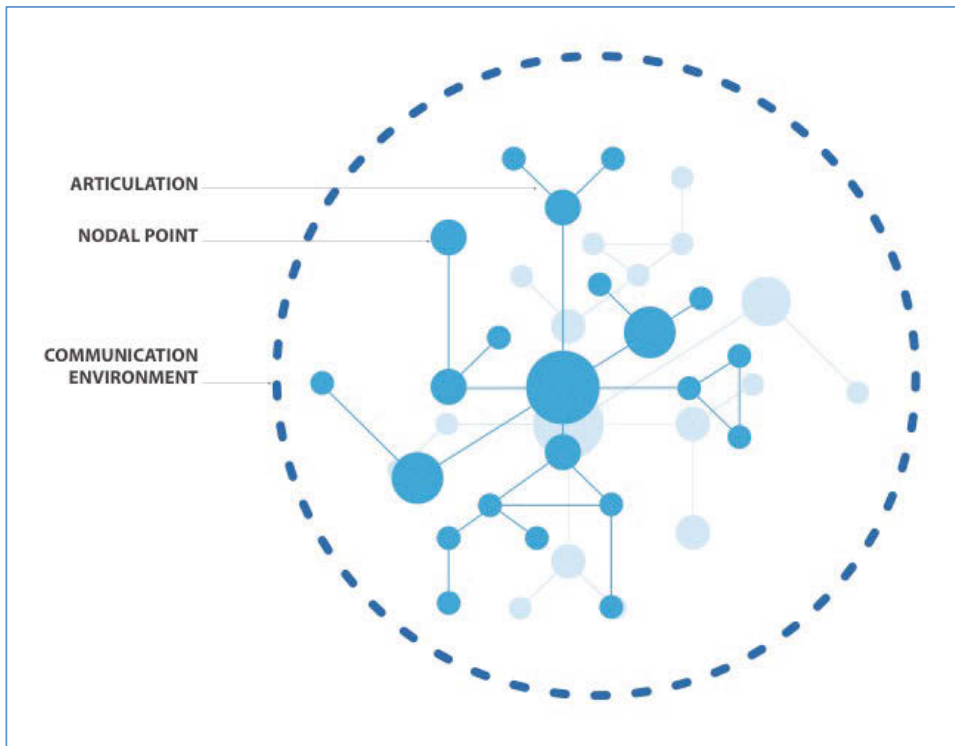


Figure 1. The reliant and contextual relationship between the three layers: nodal point, articulation, and communication environment.



Figure 3. The *Lapin Kansa* newspaper logo

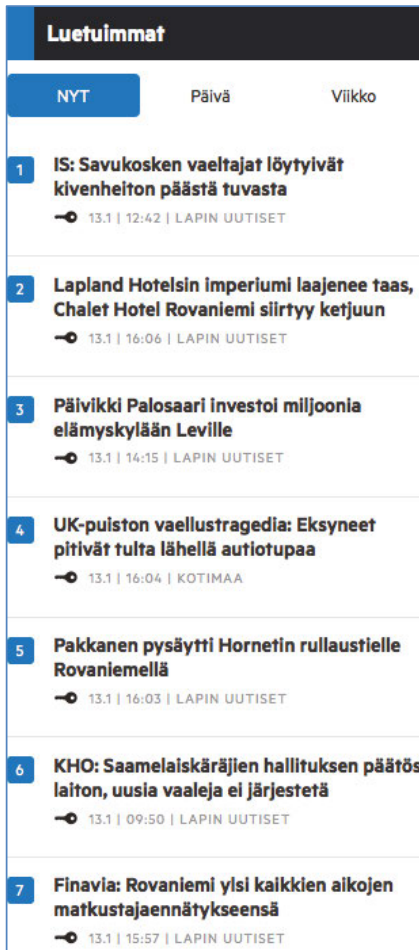


Figure 2. A screenshot of “Most popular news” on Jan. 13, 2016.

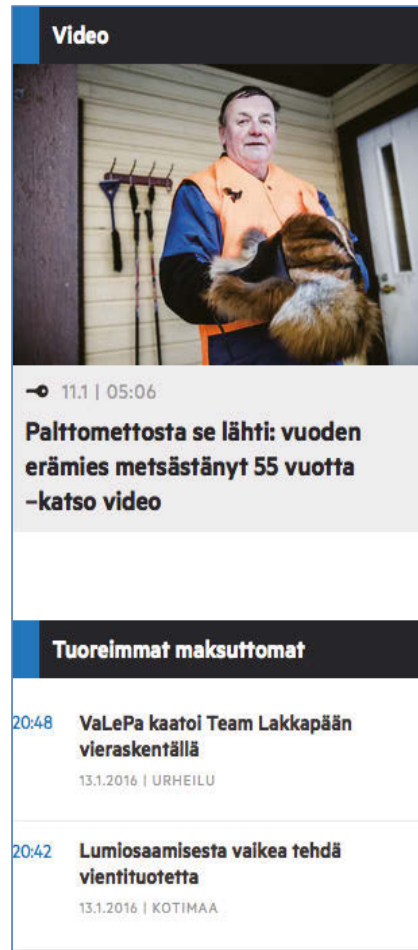


Figure 4. A screenshot of “Video” and “Latest free news” on Jan. 13, 2016.

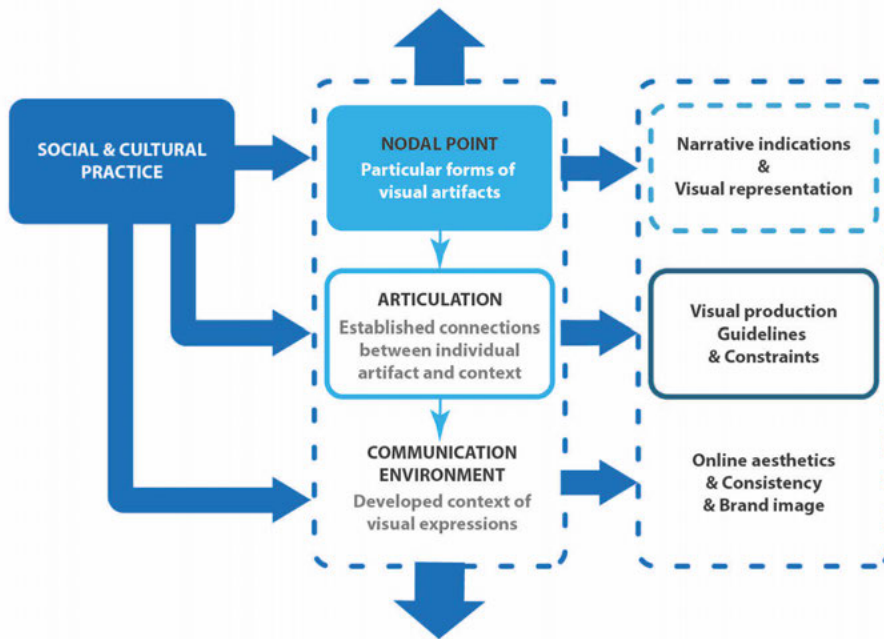


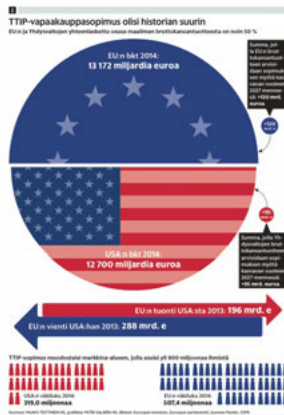
Figure 5. Social and cultural practice in relation to the three layers of re-conceptualizing online visualization on news websites.

A general overview of the two functions in nodal points in news web site.
The information is divided into two fields,
respectively narrative indications and visual presentations.

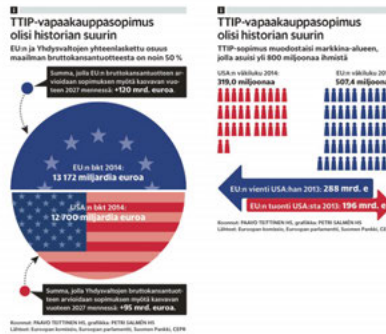
NARRATIVE INDICATIONS	VISUAL PRESENTATIONS
timeliness	column
the geographic location of story	text
searchable photos	image (photograph, illustration)
news photos	header
archives	logo
story type	grid
story thread	main content
story tone	sidebar
	footer
	'whitespace'

Figure 6. Two functions of nodal points in news websites: narrative indications and visual presentations (*Innovation*, 2014, p. 42).

Original print version



Original digi version in two pieces



Digi version combined to print

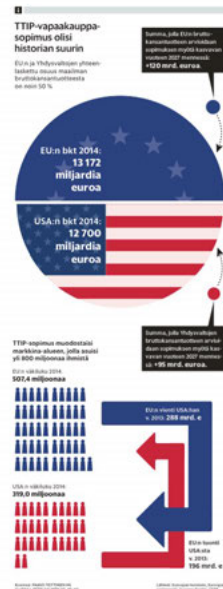


Figure 7. The influence of TTIP (Transatlantic Trade and Investment Partnership) agreement infographics with three different versions, published on May 2, 2015, in *Helsingin Sanomat*. Graphics: Petri Salmén, published with permission.

CHAPTER 6

The Role of a Visualist

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The role of a visualist: Transforming stories in a newsroom

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Abstract

Visualization in news web site is a process of transforming news stories by integrating various modes with their communicative potentials. There arises an inevitable need to investigate in-house visualist's role due to journalistic changes, with regard to media convergence in newsrooms. This text suggests rethinking about visualist's role in transforming story in newsroom, based on the evidence of multimodal practice in the workflow. Empirical material of professional design practices is collected from Helsingin Sanomat, a Finnish newsroom, using ethnographic research tools. Visual journalists' specification is investigated during the process of transforming stories. This study evokes a highlight on the multi-faceted endeavors from team dynamics in visual journalism, which, from a designer's point of view, serve to a better understanding of multimodality in news web site.

Keywords: Visual journalist, web news visualization, team dynamics, newsroom convergence, multimodality.

Summary: Introduction. Background. Literature review. Methodology. Results. Visualist's role in a social context. Newsroom convergence and physical configuration. Conclusions. Acknowledgement. References

Introduction

This article makes the proposition that the multimodal landscape in news web site makes visualist's role complicated in the production process. On the one hand, multimodality increases in news web site and blurs the vanishing boundaries between public communication and journalism (Deuze, 2007). On the other, it challenges visualists' journalistic work in terms of implementation for both multimodality and multimediality (Kress and van Leeuwen, 2001). In this sense, the changing communicative landscape raises the need to interrogate visualists'

Visualists,¹ in this article, refer to those who strategically diversify the possibilities of multimodality to make meanings; at the same time, they are working in news media and adapting their skills to the new environment (Kankaanranta, 2015). They are the visual journalists who deal with visualization issues in news web sites. Visualists choose the suitable modes and resources to shape communication and meanings (Kress, 2014). While researchers are often contending to examine the concrete outcome of the design process, such as the relationship between texts and images (Engelhardt, 2007), the design process remains shrouded to the analyst (Kress, 2014), not alone the practitioners involved.

Considering news web site as instituted of «information and communication technologies and their associated social contexts» (Lievrouw and Livingstone, 2006: 23), I presume the creative process raises attention not only on the artifacts, but also on the social arrangements or organizations that form around the artifacts and practices (Kress, 2014). Therefore, it is necessary to look beyond visualization to the people who take the role of transforming stories in the multimodal landscape, especially when more inputs are attributed to the web site in Finnish newsrooms nowadays.

Kress and Van Leeuwen (2001: 20) define multimodality as, «the use of several semiotic modes in the design of a semiotic product or event». To identify the visualists' role in web news production, I subject the concept of multimodality to a critical examination in the production workflow that involves multiple visualists performing their specialized roles. To do so, I bring a reconsideration of visualist's role in news visualization process.

The article starts by a dialogue between a visual journalist and me as a prologue. I will then illustrate visualists' role in production team dynamics and clarify the findings in discussion based on empirical materials collected during the process of transforming news stories. A comprehensive investigation cannot be undertaken, but some key questions are examined, such as:

- How does multimodality extend and amplify previous way of doing web news visualization?
- To improve reader experiences, as phrased in *Innovation* (The New York Times, 2014: 60), how do visualists undertake the role of transforming stories in journalism?

In the article, multimodal analysis deepens the inclination of the multi-faceted endeavors from visualists, while a greater understanding of multimodality in news web site will also be obtained by interviewing the professionals responsible for creating the visual transmediations.

¹ Visualists are mainly described as the designer or sign-maker who finds an appropriate way of communication design. Many researchers (Kress *et al.*, 2001; Hiippala, 2016) mention them with their specific titles in the production process, such as copywriters, project managers, art directors. On the other hand, their work is named as their values as well, in terms of information designers, layouters, motion designers and the like. In this article, I consider visual journalists' tools and workflow in the visual transmediations from print newspapers to digital. Therefore, the definition of «visualist» is elaborated around what needs to be changed and considered in their design process.

Background

During my visit to *Helsingin Sanomat*² (abbreviated as HS) newsroom I have had some informal and formal interviews with in-house visual journalists there. The following extract is from an open discussion last May with a visual journalist Boris Stefanov, held by his working space in Grafiikka (Finnish word for Graphics) Section in HS Design Department.

Me: ... So are you enjoying the work here now? Any difficulties in working in the news section?

Boris: Yes difficulty exists everywhere, doesn't it? Well, I usually have three or four projects running... I may think about the work after leaving the shift, but subconsciously.

Me: Anything else? What about the communication in the news section?

Boris: hmm... Well usually the communication between us is good. When journalists come to me, they may bring me a list of visual materials. [Pointed at the computer screen] Like these... this means they've already thought about the visualization in mind. I may decide to use or not, but at least it somehow saves my time. But in most cases, journalists came to me with a list of texts. I feel... [Smile] you know, there's no point to show them in animation (maybe in static graphics). At that time, I need to figure out what visual signs could be and what the most efficient way to express is.

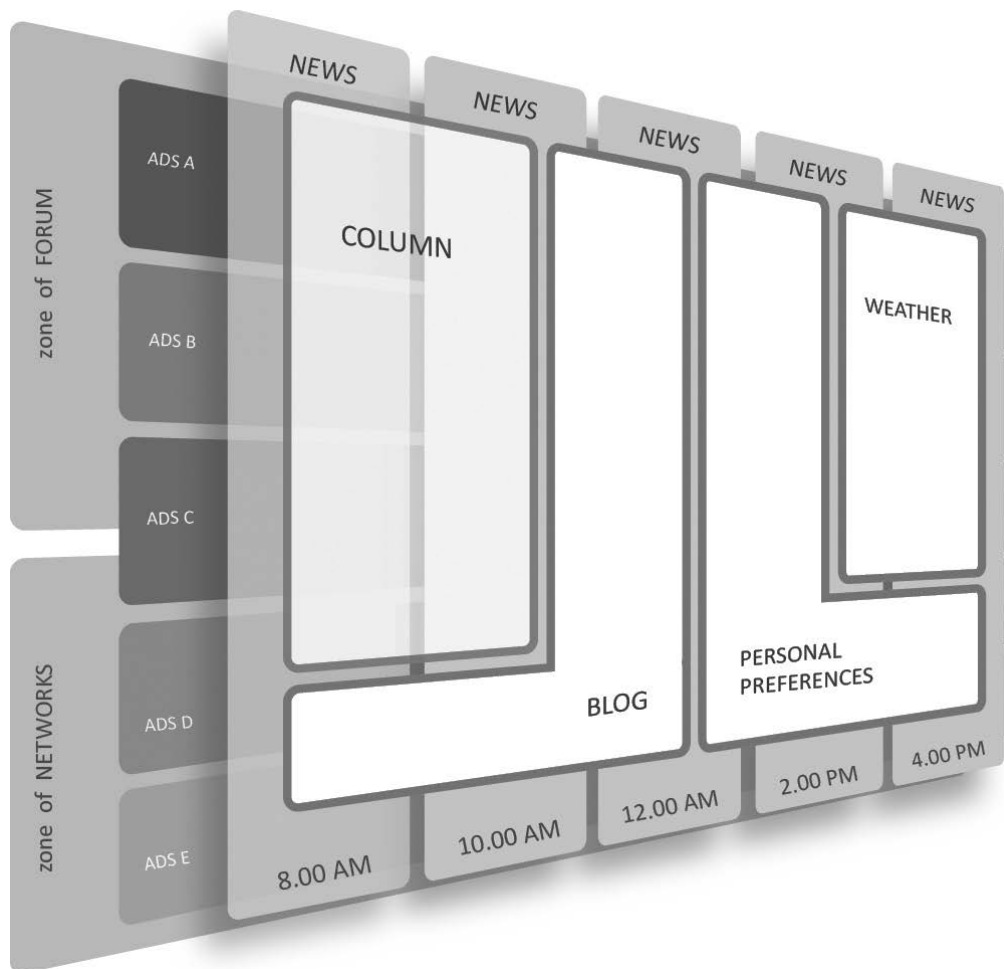
Me: This seems to be tough work, as you must be very quick in response.

Boris: Yes. But the most difficult part is, some journalists (not all, of course) don't know the point of videos or animation, as they don't have the knowledge of motion graphics. That is, the distinguish between static and moving graphics...

Carey Jewitt once proposed that we were facing the visual turn to a multi-modal landscape (2009). Multimodality is not new in visualization, as we are getting used to communicate with visual and non-verbal signs. Yet there arise more concerns about the definition or the applicability of multimodality, when it is situated in the broader context of social and technological changes in the newsroom. The heralding of new media and new technologies enables modes to be configured, constructed and recycled in different ways (Jewitt, 2009). In news web site, the modes, whether in visual or in verbal, are intimately connected and enmeshed through the endeavors both from reporters and visual journalists. Therefore, the conditions call for cooperation in news production workflow, which offer an emergent vision of visual practice that is powerfully convincing in the communicational landscape.

² Helsingin Sanomat website at www.hs.fi. Helsingin Sanomat is the biggest newsroom in Finland, considering its readership, number of pages, journalists and working facilities. In this article, HS newsroom is working as a representative of co-involvement in visual journalists' work.

Figure 1



A key aspect of this is how multimodal ensembles feature web news visualization. Jenkins (2006) uses the concept of convergence culture to describe the new era of media use where new and old media, media producers and consumers collide unpredictably in their request for control and power. The remediation from printed press to digital news prompts visual journalists to make substantial considerations of how practices should work and change for improving reader experiences. Understanding visual modes as multimodal integration with new media technology and cultural practice asks how this characterization of web news as visualization is working (Figure 1). Newsroom convergence evokes a visual lifting in visual information structure, instead of a simple accumulation of various elements in visualization. Visualization in news web site today is no longer a one-way communication; rather, the communication is becoming layered. Within it, there are institutional and practical conversations between different groups. On one hand, layered communication is adaptive to web news, as dozens, hundreds or thousands of (textual and visual) narratives are divided into various layers.

On the other, it is beneficial that the production team dynamics can be reviewed from the bottom line. According to Norris (2009), all modes and all media carry affordances and visualists utilize the culturally mediated means to produce and reproduce the communicative meanings.

The idea of layered communication indicates how to perceive the multimodality in news web site. Meanwhile, it also extends previous thinking of visualization. In the old system, people may get satisfied with one-medium visualization. But in news web site, each individual visual is working sufficiently as a «snail» in the layer. The interplay of such many works can create an unprecedented degree of complexity and generate a depth of engagement among viewers (Jenkins, 2004).

The outlook of the final multimodal artefact comes from the emergence of technology and cultural practice, but it also paves our way to more attention to the specificity of the changes in visualist's production workflow. Technology emergence sharpens visual journalist's toolkit in redesign construction, while the multimodality elaborated in different ways transforms what can be done and by whom it can be realized. This heralds the moment that recognizes the need to understand visualists in relation to their different specification.

Literature review

By transforming news stories in web site, visualists tell news based on the visual representation. Chatman said: «Every narrative is a structure with a content plane and an expression plane» (1978: 146). It involves not only the content told by reporters, but the meanings interpreted by visualists during the transformation process as well. In other words, if we speak of news story as a communicative mode, a visualist necessarily needs to utilize visual representation to produce the communicative mode of news. In news web sites, visualists use various modes (narratives) as storytelling methods.

Followed by Kress and Van Leeuwen's social-semiotic perspective (2001), «all signs in all modes are meaningful» (Kress, 2010: 59). Such notes provide a theoretical plate for understanding multimodality in digital format. Bezemer et al. (2012) have discussed some key concepts in multimodal social semiotic studies on learning, such as mode, medium and affordance. The modes are put together, arranged, organized through its mediums, and many such works serve as multimodal design. In the process, multiplicity of modes makes meanings possible by affordance and modes differ in their affordances. These ideas were originated from psychologist Gibson (1986). Later Kress and Van Leeuwen extended their understandings of mode based on Gibson's concept, «language and visual communication can both be used to realize the 'same' fundamental systems of meaning that constitute our culture, but each does so by its own specific forms, does so differently, and independently» (2006: 19). Especially in web design, there are even more choices for modes to convey meanings.

«Within the broad range of modal choices available in a society, there is then the individual's decision to make choices to use *these* modes rather than *those* in *this* environment for *these* reasons» (Kress, 2010: 76, emphasis in original). I do

agree with Oleksiak (2012) that describing and analyzing these choices is the basis of multimodality studies. What is less developed in the practical applications, however, is that Kress (2010) has not stated much about how sign-makers decide and design communicative modes with thinking about social practices.

Web news visualization more or less takes existing modes of visual production within the institutions of new media as granted. The case deals with digital production technology enabled by media workers, and the possible improvements that could follow from the people who have the knowledge of how to consume the tools at its best. Therefore, these two aspects should be treated as complementary to visual multimodality in news web site, which is spawned as a way to explore some implications of co-involvement inputs from multi-faceted endeavors.

Especially for the professionals in the field, technology speeds up the creative process and contributes to one's existing competence on skills, knowledge and talent. Therefore, Deuze (2007: 74) thought it as «central to media work», but «its role is neither unproblematic nor inevitable». Deuze (2006) once defined viewing in the open but disorganized news web sites as 'dead', and even as a 'zombie institution'. Some criticism goes to the technology at the expense of proper visualization. Jenkins (2006) thought media convergence is a top-down corporate-driven process, while technology has been particularly part of the implementation toolkit in the new media industries (Deuze, 2007).

As one of those who take the implementation in news web site, visualists' practices have become more complicated with technological development. It seemed that not only technology-focused innovation in journalism (Lewis and Usher, 2013) thicken the plot, but also the potentials in new media improve visualists' work in the newsroom. In the remediation (Bolter & Grusin, 1999) process, visualists actively consider adding what is called «new media» to their web site. The role of the visualists as co-creator of the online journalism increasingly finds acceptance throughout the journalistic industries. Like what Farnsworth from BBC (2013) thinks about digital journalism: it is not simply about visualizing data; it even brings together visual designers with the teams that create the more high-end multimedia graphics online and harnesses the unprecedented creative opportunities.

Farnsworth argued that visualist's role is definitely enhanced in the newsroom. Put more precisely, technology provides a more interesting platform for multimodality, and visualists make choices to integrate and make newsroom's meanings through visualization. In this sense, the technological improvements in digital visualization are likely to be rather less significant than other differences that arise from visual journalist's practices.

As visualist's role in the newsrooms and in the journalistic field has to be changed when more endeavors are invested in news web site, there arises a need to look closer to visualist's role in production team dynamics. In what follows, visualist's role in transforming stories in news web site is discussed in relation to their specification in the newsroom.

Methodology

There are three identifiable stages in the research process: 1) Ethnographic observations and situated interviews in the newsroom; 2) Iterations and categorization of the data; 3) Analysis after the observations. The analysis is based on existing research as mentioned above, as well as a case study of a Finnish newsroom. Rather than speculating, empirical evidence from newsrooms seems to be more relevant to the current situation and actual developments in newsrooms (Erdal, 2011; Paterson, 2011).

Within social science research, multimodality and ethnographic knowing has been mainly given consideration within the stream of research known as social semiotics and the phenomenology of perception (see e.g. Pink, 2011; Ingold, 2000). I believe this anthropological approach is especially interesting to discuss in relation to visual transmediations process precisely because it is founded on different empirical research materials. In addition, Norris (2009) and Wertsch (1991) argued that visualists as social actors perform web news visualization by mediated actions with or through cultural tools. The multimodality in web news visualization allows us to study visualization from different modes and even leads us to investigate visualist's role according to different modal configuration (Figure 1). Therefore, a mix of methods involving categorization, interviews and observations was used to obtain feedback during the iterative development on the web news visualization process. The aim is to understand how these visualists' specifications are divided and how deep their work is involved in terms of the functions and appropriateness in the specific newsroom.

The article is grounded in a combination of qualitative methods for gathering and analyzing data, using ethnographic research tools. The field observation in HS Design Department consisted of a total of two weeks in April 2015. During this period, there started a reconfiguration in design department, which influenced visual journalists from both the print and digital production teams. Throughout this period of transition, I was present at a number of desks and attended editorial meetings. In addition, I have witnessed visual journalists involved are actively reconfiguring their positions in the newsroom and renegotiating their practices in web news visualization.

In the research process, different observation strategies were here construed to functional, living and embodied specification in HS Design Department (Table 1). The reason of multiple strategies comes from the multi-faceted endeavors from design practitioners, and the complexity of their work. During and after the fieldwork, I carried out 20 semi-structured qualitative interviews with information designers, data journalists, layouters, photographers and reporters. The selection of informants covers several sections in HS newsroom, rather than an exclusive focus on the design department. I aimed at interviewing informants from different specialized sections (Graphic, Data, Monthly supplement, Saturday, Sunday and Photography).

The fieldwork in newsroom is pragmatic as a grounded theory in the article for two reasons: 1) to understand visualization as design practice that may support communication within newsrooms; 2) to investigate how visual journalists'

mediated actions are realized in visualization of news web sites. At the time I was present in Design Department in HS newsroom, creation process was recorded for later analysis, especially the moment when co-involvement happened between desks. My main concern is to gain insights in visualist's way of looking at the communication and the synergy of practitioner, tool and material (Ingold, 2011). During the co-involvement process, I learn empathically about visual journalists' mediated process in practice (Pink, 2009) from a corpus of research materials for analysis, such as design guidelines, photos, recordings and videos. In the view taken up here, there appears to be the first tentative category, whereby the specification divisions lie in the empirical observations in visual journalists' work.

To distinguish different divisions of visual journalists I wanted the respondents to be able to communicate as naturally as possible and feel comfortable with being observed. Therefore I acted as an outsider in the context of their work and observed their professional identity and ability to manipulate work (Grosz, 1995). By their specification with different duties, the categories relied primarily on what emerged from the observation strategies, which depend on their work production and work characteristics. Accordingly, my qualitative methods for each specification are adjusted due to the visual journalists' involvement in the design department.

Table 1. A mix of methods by visual journalists' specification in HS Design Department, which were obtained from different qualitative methods to collect practice-led data.

Specification	Qualitative methods Collecting practice-led data
<i>Graphic designer</i>	Scoping review of literature Grouping professionals Interviews with in-house graphic design professionals in HS newsroom Observation/record/video/photo
Layouter	Grouping professionals Interviews with in-house graphic design professionals in HS newsroom Observation/record/video/photo
Photographer	Interviews with in-house graphic design professionals in HS newsroom Observation/record/video/photo
Programmer	Interviews with in-house graphic design professionals in HS newsroom Observation/record/video/photo

Despite visualists' diverse nature, I presume it suitable to investigate their role in the context through different strategies and methods. The case study can teach us something about more common newsroom cultural issues particularly in Finnish newsrooms. The findings will be useful to further illustrate how organizatio-

nal contextual factors shape or affect the web news visualization process in other compact Finnish newsrooms.

Results

In the process, I found visual journalists with different specifications were fulfilling different roles within the specific context. Since the members of projects already knew each other and had sometimes even been working in the same project before, they shed more light on cooperation and interaction between (people working on) the different phases of the visualization production. On the other hand, the situation draws our attention more specifically to how interaction between different desks in the newsroom serves as a synergy in creating reader experiences. It is a matter of comprehending how multi-faceted endeavors from designers are constituted in visualization of news web sites. It is obvious that visual journalists' daily work is, more or less, involved into coworkers' production. Communication and efficient interaction is a concern for everyone in visualization process, and visualist's role worth reconsidered in case there is blurry job boundaries or team dynamics.

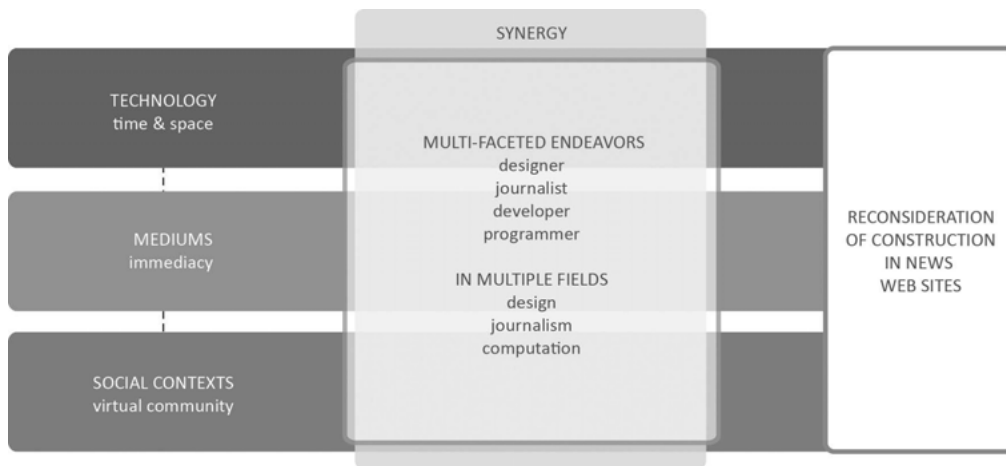
In this section are discussed what co-involvement in team dynamics means and how it may affect web news visualization, as production from visual journalists. Three of my research findings will be highlighted: design practitioners' role in a social context, their role in newsroom convergence and their practices in HS newsroom. The findings are basically facilitated by the ethnographic research. Visual journalists' role is converged into a meta-context, in a telling consideration of the emergence of multimodality in web news visualization. Furthermore, the production of design practices is integrated into co-involvement inputs within visual journalists' mediated actions with new media. By co-involvement I mean a synergy realized by the multi-faceted endeavors in news production team, which collaboratively serve to a better understanding of multimodality in news web sites.

I want to examine visualist's role from three levels —the role in a social context, the physical configuration in the newsroom and their practices in professional culture. Their daily practices and work determine how they work and with whom they cooperate. These will be well elucidated in the following sections.

Visualist's role in a social context

Given that newsrooms have had approximately 160 years' history in global newsgathering, production and distribution, they should be at the forefront of multimedia (Paterson, 2011). As aforementioned, multimodality amplifies the visualization performance in news web sites and sharpens visualists' toolkit. The underlying visual lifting opens up greater possibilities in visual journalism, whilst design practices in online journalism have evolved to a broader scale of disciplines and converged with different forms and genres. Therefore, how do the design professionals involved give meaning to their work and professional identity within news production teams in such a social context?

Figure 2.



This part has focused on ascertaining the underlying role of visualists who shape the meaning and significance of the various influences on news stories, be they visual journalists, data journalists, journalists, programmers and developers. Their multi-faceted endeavors have constituted visualization in an online platform. Examine of how visualists are reconfiguring their positions in newsroom is important for two reasons. First, it prompts understandings of how visualists perceive the co-involvement of team dynamics; second, it raises a valid research question: how do the visualists, who not only motivate but also participate in the practices, learn?

I hereby try to illustrate a diagram (Figure 2) to reconsider web news visualization when multi-faceted endeavors are involved in transforming news in a newsroom. Convergence culture has been part of organizational work particularly in game industries (Deuze, 2007), and game publishers even regard their consumers as co-developers. Yet in my diagram, I argue that there also come co-involvement endeavors within the practitioners' groups in newsroom. It deals with how visualists perceive the news media processing, which has been partly fuelled by the media's changing ways of visualization, partly necessitated by readers' eyes and tastes for immediacy, and partly initiated by practitioners' thought patterns.

In Figure 2, it is assumed that technology, mediums, and social context are connected contingently. The contemporary technologies are facilitating immediacy (Bolter & Grusin, 1999) through various mediums, while different mediums are evolved to deal exclusively with social needs. The emergence of mediums developed by technologies has challenged traditional journalism; meanwhile it has affected to how news media bring a new way of working as a connection with a mass of people to time and space. This then contributes to virtual community in the social context.

With the dynamism of media convergence in mind, the role of journalistic practitioners has been introduced as synergistic in massive news processing,

though some journalists might have been reluctant or skeptical to top-down approaches to convergence. The move from printed press to digital news prompts design practitioners to make substantial considerations of how practices should work and change for improving reader experiences, which in turn give active meaning to news content.

Therefore, when considering new media in visualization, there invoke much more discussion in visualization design in news web sites apart from traditional principles of dealing with text-image relationships (for instance, Golden Mean philosophy is widely applied in design practices, so that visuals are not placed arbitrarily). A sound understanding of visualization and remediation leads to solid comprehension, propelling the visual ‘story’ the designer intends to tell behind the news. In this sense, there comes an awareness of to what extent design practitioners become involved in both participation and anticipation in the constitution.

The reason to rethink of the web news construction from a meta-context perspective, and to define visualist’s perceptions to be of synergy effect, is that visualist is one of the main players who sustain the connection of virtual space, mediated tool and the social environment. It is through the daily interaction of creativity, content and co-involvement within media practitioners that they shape their work and profession.

Multimodality in news web site may appear to be too broad a concept to be elucidating as a unit of analysis in this article. However, when looking at the multimodal performance more precisely, we find that each section in online newspaper has been transformed in different multimodal modes, no matter which layer (Figure 1) you are investigating: a video constructed by motion graphics and textual words; a column started by a profile photo and ended with a story; and a breaking news combined with both infographics and a simple description. Visualization production team dynamics have to be delineated by finding the multiple faceted involvements from visualists. Once we start investigating visualist’s role in web news visualization, we will discover that there often are many layers of actions from different disciplines. The fact may coincide with Jenkins’ (2006) notes about convergence culture where old and new media collide. On the one hand, with the emergence of new media, the outlook of visualization of news web sites have been reviewed as reliance of visual representation. On the other, visualist’s common ground is affirmed and a strong affiliation by perceiving their positions is revealed through understanding the cooperation of multiple disciplines in news production.

Newsroom convergence and physical configuration

Considering reduced time frames and limited creative freedom for in-house visual journalists, there implies that individual work no longer satisfies the creative process of news production work. In May 2013, the Danish trade organization for media held its annual competition. The gold award was given to a special theme story called ‘A one-way ticket to Zurich’. This was «the first time» that a story like this type, with a combination of words, images, sounds and videos had

been prepared exclusively for the web (Schou & Johansen, 2014). Newsrooms have different divisions for texts, visuals, videos and photography, which sometimes act autonomously for projects but more frequently nowadays coordinate their work in-between desks. The fact that the above news story was awarded in the competition signaled the synergistic effects of journalistic practices. Before furthering with this thought, let us focalize the designer's role in a design department and look closer at the interrelations between design practitioners in HS newsroom, as it is essential to establish a clearance of design practices.

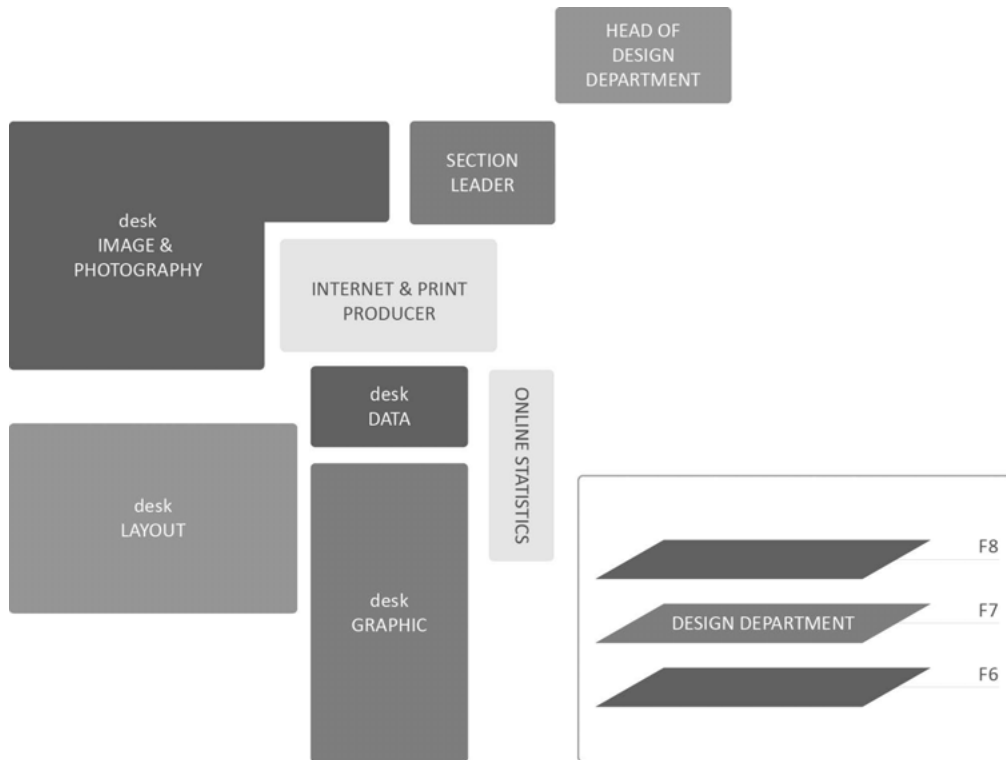
Table 2. Summary of the involvement relations for each specification in visual journalism.

Specification	Visualization development	Involvement relations
<i>Graphic designer</i>	Daily department meeting Initial selection of visualization options Iterative visualizations Frequent involvement in projects	Journalist Data journalist Layouter Editor Programmer Internet/print producer
Layouter	Iterative layout visualizations Communication with editors	Journalist Graphic designer Editor
Photographer	Daily department meeting Initial photographic visualization Communication with journalists and editors	Journalist Graphic designer Internet/print producer
Programmer	Initial selection of visualization options Initial bespoke visualizations development	Journalist Data journalist Graphic designer

It is obvious from the observations that each specification has corresponding involvement relations with other coworkers in the newsroom. The collective influence that one specification's value has on the other visualists' mediation inputs is extremely strong and is one of the key reasons why newsroom convergence culture has gained much attention (Erdal, 2011; García-Avilés, Kaltenbrunner, Meier, 2014; Wallace, 2013). Essential to the concerns in this article are the ways in which design practitioners are affected by redrafting their professional environment as creative industries, especially operated within a convergence culture in newsroom. The emerging new media system inspires and is inspired by networks of several desks under one-roof operations for media production, which had previously worked with geographical separation.

In April 2015, there just finished a re-figuration in HS Design Department, so that the whole design team is now sitting physically closer to each other in the middle floor of the three-storey newsroom (Figure 2). Within the new reconfiguration, any practice in the design department could inalienably exist, while

Figure 3.



the cooperation between different desks with distinct functions sparks more efficiency in practice. As Lasse Rantanen (2013), a visual journalist from the design studio³ based in Helsinki, stated, ‘... it (the result) is «1+1=4», or at least «1+1=3»’. ‘Before the integration of a big design department as now, some of the (design) people (, such as layouters,) were working without their own chief and scattered among other visual desks’, said Petri Salmén, one design producer in HS, ‘[laughter] Well, the work now is definitely making our life easier.’

Although in-house visualists’ production team, as a small working community, is somewhat atypical community, I believe valuable insights can be obtained by investigating such ‘extreme’ cases. During the observation, I suppose the physical move within the design department toward newsroom convergence has deeper roots. The physical proximity in the large newsroom prompts both integration within the design team and collaboration in different news projects. In Figure 3, it is clear that which desks tend to have more peer production, such as desk DATA and desk GRAPHIC, and this is the exact situation in practice. Besides, journalists are generating ideas about where to find the right visual person for a specific news story.

³ The Linesmen website is a joint portfolio for two illustration and graphic design studios in Kallio, Helsinki. Website at <http://linjamiehet.fi/>

Visualists' practices and professional culture in HS newsroom

Since HS, as the biggest newspaper in Finland, has just finished the preliminary convergence in Design Department in the newsroom, the news media pose a challenge for the newsroom to adapt both infrastructure and professional identity in compliance with the newsroom culture. Co-involvement among design practitioners' work creates interesting and functional family-effects within the media corporation. In the process, the workflow is facilitated by a physical proximity and prompt communication. I presume the convergence process to be «preliminary», as we see that reconfiguration and reshaping of visualists' roles continue and the butterfly effects have been developing in HS newsroom.

My field observations implied visualization work in newsrooms as complex and multi-faceted endeavors. The visualist's professional role is attributed mainly to convergence and convenience shaping the relationship in co-involvement in the creation process. However, the process asks for easier collaboration in the workflow between desks.

One good trial is that visual journalists get embedding codes that facilitates both visualists' and programmers' workflow in practice. Therefore, information designers in Graphic Section directly apply html code from programmers in the newsroom nowadays, for a better and easier application to embed designs into the HS website. The html code is pre-scheduled and thus planned, and yet it is still necessary to get the results of the visualists to be published as quickly as possible. In this case, developers and programmers have created the module beforehand and information designers finish the output as long as visualization is finalized. As this visual journalist explained:

Many differences have happened nowadays, and one of the big differences we are having is that Graphic Section is merging with Data Section. Although it took us (information designers) a bit time to learn something new (how to get html code and in what ways to embed designs straight into HS website), it facilitates our work and actually our pressure is somehow released. So we do not think it as a burden to learn new things. In addition, one of us (four information designers in all in HS newsroom) is working for the so-called super spread, which is a ten-column paper, and the other three of us seem to be doing very well with all the other tasks and enjoying relative freedom from the work.

In this quote we see that visualists' work is re-structuring. On the one hand, they should learn new stuff in the practice, which facilitates web news production process. On the other, with one of them mainly contributing to the heaviest work, it brings some freedom for the rest of the team. This was described as 'hybrid teams of journalists' (Dailey et al., 2005: 5), where the key people, multimedia teams sit together to plan and assess each news event on its merits. In this case, they even assign a more appropriate way to produce news stories efficiently. The changes in visualists' practices lead to some differences of their professional culture in HS newsroom. Talking about the reasons, this interviewed visual journalist explained:

We need to change, not only because the media we are using are different, but also because HS people are getting less. People are leaving from time to time for either career or personal reasons. This means, we need to work out a better system to make the workflow functional.

In 2007, Deuze has already mentioned media work as ‘liquid life’, linking the trends of concurrent individualization and globalization with the convergent trends in life, work and play. Today, this pattern still emerges in the moment when journalistic practitioners feel insecure of their work as the newsrooms are restructuring, no matter whether the company is forced to do so.

For visualists working in HS newsroom, it seems that they have found answers to get used to the new system and the concurrent developments. In the process of transferring more focus on digital platforms, visualists’ practices are not completely being brought to job destruction, but more rearrangement and ‘workforce flexibility’ (Sennett, 1998) has emerged. Therefore, everyone should get prepared to learn something new at any time. This, in line with Deuze, means that visualists, both young and old practitioners, have to come to terms with structural job insecurity and adapt themselves into the professional culture.

Conclusions

To conclude, I return to the question with which I began to discuss —how visualists undertake the role of transforming stories in online journalism. Deuze has called media life as «liquid» modern times, as media professionals employed in journalism embody in their workflow all the themes of social, cultural and technological changes nowadays (2007). Visualization landscape is more than simply a multimodal shift. Multimodality in news web site embodies in visualists’ workflow the considerations of media convergence (Dupagne & Garrison, 2006). It alters the relationship between existing technologies, genres and cultures, let alone the news practitioners’ workflow and professional ideology. The situation facilitates our understandings of visualists’ role in news production team dynamics.

Visualization in news web sites is essentially inquiring a visual lifting. Meanwhile, it implies a reconsideration of how design practitioners balance creativity and intentionality in news narration, not only about new media but also about the newsroom professional culture. For example, layouter’s work, one specification in visual journalism, is apparently getting converged into newsroom culture. For in-house HS layouters, there is an increasing dependence on CCI Layout Champ⁴ (a desktop publishing software), which is a sophisticated layout design package for an efficient content management with convenient use. Despite of some customized services in-house, media formats and visualization is generally standardized to accommodate a fixed system. One consequence of the dependence on this

⁴ The CCI program allows journalists, editors, layouters and graphic designers to work on content at the same time.

program is limited and even gradual elimination of layouters' creativity. Yet it explores the possibility of engaging collective inputs from the news production team, where journalists' work is co-involved in the production process.

The implications of the consequences of multi-faceted team dynamics are embodied in three levels from a meta-context perspective, the physical proximity in a case study and their practices in professional culture. The factors investigated in this article (Figure 1) may predict how design practitioners' creative disposal works in a meta-context, especially when multiple endeavors are accountable in newsroom convergence. An introduction to how meaning and significance with new media are shaped in layered communication therefore invites a way of understanding how to realize visual lifting in news web sites. In this case, visualization benefits from the convergent news production operation that rarely exist when visual journalists were housed in separate locations in the newsroom and work sparsely. Their co-involvement endeavors in visualization production result from the roles both in a social context and in the newsroom. Therefore, the findings show that visualists' work in professional culture in this particular newsroom has been changing. Their role in HS newsroom was reshaped to a great extent by a need to adapt themselves into the current restructuring newsroom.

This article should be considered to be preliminary, as the research findings I present here are still part of the results of my ethnographic research conducted in Helsingin Sanomat newsroom. It is within the design department that I have obtained the understandings of synergy among different visual production desks. The number of players in the field has increased and their relations have become increasingly complicated to define and observe. The construction of visualists' workflow in the newsroom through redefinition and reconsideration is an ongoing process. The investigation of visual journalists' role indicates that it is valuable to think of news web site visualization not as a simple accumulation, but rather as reconstituting the way of news transformation. Visual production of online journalism is a platform with multi-faceted endeavors from the visual production team. Not only are different mediated inputs simultaneously collaborative in online news, but also they acquire co-involvement through visual journalists' efforts in the production process.

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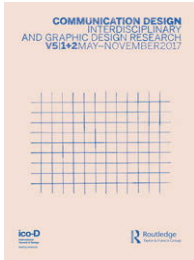
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CHAPTER 7

Unpacking Communication Tensions in Visual Transmediation

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Unpacking communication tensions in visual transmediation from print to digital papers

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ABSTRACT

The interest in visual transmediation in newsrooms has emerged against a backdrop of multimodal change in design practice. Visualization in news websites can be described as having new requirements and considerations of transforming textural reportage. In this article I consider communication tensions evolved as the result of contemporary media convergence in the newsrooms, and combine them in discussion on how visual journalists make collective effects in practice. Empirical materials involving the fieldwork about in-house visual journalists' routines, activities and practices are collected from two Finnish newsrooms, respectively Helsingin Sanomat (HS) and Lapin Kansa (LK). Considering media convergence in newsrooms, I focus on an elaboration on the visual transmediation in the two newsrooms with ethnographic research tools, particularly in corporate settings. In doing so I reveal some of the limitations and possibilities emerged in visual transmediation from print to digital papers in the newsrooms.

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Introduction

Nowadays, communication and collaboration between multidisciplinary teams are inevitable in the twenty-first century, especially when technological developments of the new media and the revolution of information economy have profoundly influenced the practice of visual communication design. Such a design context demands a dynamically networked team of multidisciplinary experts who can work both individually and as a part of a design procedure.¹ Some research has already been dedicated to proclaiming the new possibilities and benefits in collaborative projects. For one thing, involving collaborators demonstrated to be effective in addressing multiple needs in the project, such as connecting activities, constructing dialogues, reconciling concerns and fostering novelty in creation. For example, a four-year case study was conducted in UK to investigate the productive values of designer's creative practice within academic-industrial collaborations.² For another, there has been an increasing of awareness of knowledge sharing both within and outside organizations, for instance, a field study of 182 work groups in a global organization that demonstrated

performance improvement when external knowledge sharing was engaged in diverse work groups.³

Media work, described as ‘liquid life’ by Deuze,⁴ shows a prevalent sense of permanent flux and constant uncertainty. It comes from a rapid-changing global environment, both in technological field and through different media. Meanwhile, interaction aesthetics that enhances audience’s detection of design affordances⁵ ask for multidisciplinary collaborations as well; this continuous confluence between the aspects of design through media creates bewildering complexity. In news organizations, the key to understanding our opportunity and necessity to collaboratively “remix” different specialists from multiple disciplines is to make this change as a way for us to make sense of the growing complexity. In this article, I conducted ethnographic studies to place empirical findings in the context of transforming visualization processes in two newsrooms. Helsingin Sanomat (HS) witnessed the middle stage of visual transformation from conceptual to practice in the biggest Finnish newsroom. Lapin Kansa (LK) examined the pre-stage of media convergence of different team members during visual transformation in a middle-sized regional newsroom. Findings of this study should be useful in providing guiding information for visual journalism.

Background

Multimodality increases in news website visualization

The news media have evolved from a pre-dominantly reliance on text-based reporting to those embracing multimodal communications. On the one hand, it is attributed to the vanishing boundaries between journalism and other forms of public communication,⁶ such as individually customizable methods through menu interfaces, Web browser, client emailing, instant sharing and Rich Site Summary (RSS, though also called Really Simple Syndication) subscription. Either commercialization or cross-border merger happening in this field makes all other forms of news media possible and ‘news is a major branch of the information business, not an option, a basic necessity.’⁷ On the other, culture and technology allow both reporters and readers to communicate with ease through mobile devices and this has led us to explore the growing importance and popularity of other forms of communication except text-based journalism.

The largest media companies in Finland actively developed new forms of web-based publications during the second half of the 1990s.⁸ Before that revolution, visual journalists mainly relied on paper communication. The fact that newspapers existed in a single medium responded to the limitations of printing, distribution and display. Nowadays, the type of content, news frequency and expectations of readers all greatly influence what, where and how visual journalists use multimodality in practice. Just as there is not simply one way to make visual composition in print, screens are not one size fits all. Before visual transmediation from print to web, visual journalists have to reconsider the whole design process about technically infinite in variety and different possible impressions.

Multimodality is now gaining academic ground due to the changing communicative landscape, as stronger reliance is on various modes other than merely texts. In visual transmediation, both text and image are brought together as mutually informing partners in news storytelling.⁹ As to the way that multimodal modes are mutually informed in the

process, a social semiotic approach to multimodality in visual communication demonstrates the active production of meaning in several studies. For instance, a 'compositional' metafunction is done by visual resources to form the visualization into a coherent whole.¹⁰ The linguistic paradigm is then transmediated with visual texts in a consistent framework,¹¹ and complementary meaning potentials emerge in the composition of different modes.¹² In this case, people's aesthetic experiences have enhanced not simply due to visual qualities, as well as 'form and structure, qualities that define a situation, our felt sense of the meaning of things,'¹³ which in turn ask for more interesting compositions of multimodalities in visual representation.

Academia gives the explanation of the emerging multimodality in the field, but this is not the end of the story. As more contributions have invested into news websites these days, both multimodality and multimediality¹⁴ are allowed in practice. In visual transmediation in news websites, information design, as a production medium, is multimodal in its affordances, because it involves texts and (motion) visuals, meanwhile it can only be seen, and not been heard, smelled, touched or tasted. The case of illustrations follows. Another textual transmediation form, on the other hand, could be videos, which can be both seen and heard. Video therefore invites audience to a both multimodal and multimedial world. Several modes (e.g. pictures, languages) realized in different media (e.g. infographics, video) are used in news reportage, and this is the result of a particular social environment. But how multimodality affects production media depends on a specific organizational context.

Expertise and collective effects in newsroom

People in the media as creative industries used to muddle through independently with a life full of their own breaks and contradictions, but the basis of this life has become precarious as everything would be woven together. 'Diversity and unclarity' caused by different agenda such as globalization, ecologization and digitalization¹⁵ have shed light of collaboration in practice. Inspired by the emergence of new media, news practitioners have found a way to work collaboratively; they may still keep their way of working individually, but no longer independently. Yet the way to work collaboratively is not that easy as expected, in that individual practitioner's tacit knowledge and conceptualization has to reach an agreement,¹⁶ thereby producing norms, routines and rules in a certain way. Traditional newsroom organization, according to Moen,¹⁷ failed to take advantage of the synergy of the reporters, editors, photographers, artists, and designers. He also notes:

The traditional newsroom is organized vertically to move the raw materials horizontally ... the decision-making authority follows downward from the editor to the departments. Each department produces its own product: stories from the city desk, photographs from the photography department, graphics from art department, headlines from the copy desk and layout from the news or design desk. This structure creates unnecessary barriers. Reporters often are not consulted about editing changes, and photographers are seldom asked about selection, cropping or display. Artists too often are told to produce illustrations, charts and maps on short notice and with incomplete information. Furthermore, the designer who puts all these efforts together often doesn't know what is coming until it arrives. The managing editor often specifies what should be on page 1 with little regard for the effect on photo size, white space or the number of jumps.

Regardless of the different titles used in 1990s, we have seen the inconsistency of visual journalists' work in the past. Nowadays in newsrooms, the cooperation between multiple disciplines, such as journalism and design fields, seems to be more feasible than before. For

one thing, as a backdrop of collaboration, multimodality allows potentials of different communicative use of media. The news production is associated with different channels from multiple disciplines, such as reporters, information designers, motion designers, data journalists and photographers. Reporters usually turn to visual journalists for cooperation in visualization when they 'feel' that there is a need to have complementary visualization so that the news looks either more compatible or seductive, and raw materials flow successfully and horizontally between desks in news production.

For another, the interpretation of 'material resources'¹⁸ is characterized by a particular configuration of media qualities, while it is the practitioners who make the decisive choice of the multimodal text. Some inspirations of these decisions come from previous experiences, as 'the similarities and differences between innovation processes in online news and in other settings would help to ascertain what might be unique to the journalistic field.'¹⁹ Therefore, the result of multimodal text is both the effect of collective inputs involved in the newsrooms and the integration of multiple expertise.

Conceptually distant of ideation

Visual transmediation discussed in this article is rendered complex to undertake by the communications between reporters and visual journalists. Meanwhile, involving transformation from printed newspapers to digital version can be a means of addressing challenges, particularly in the early stage of 'Digi(tal)-first' policy, according to Petri Salmén, one design producer in HS. The new requirements for practitioners arise from different values held in their creative practice within a complex collaboration.²⁰

Theoretical perspectives have identified designer's thinking as several substantial root, such as a way of reasoning or making sense of things,²¹ and as creation of meaning.²² From the ethnographic observations conducted in newsrooms, visual journalists' work is likely to be practice-based activity. They consider the contextual information and 'how sense can be made of something and given this, the designer is then in a position to choose which contexts should dominate and the manner in which they should.'²³ Although accuracy and truth are part of the competence and practice of the journalistic work, creativity is the main point in design ideation. What reporters do, on the other hand, mainly is to gather information and present it in a written or spoken form in news stories, feature articles or documentaries, as *The News Manual* proceedings archived in 2008. Conceptually distant gap between reporters and visual journalists determines the representational gaps.²⁴

In the communication between reporters and visual journalists, intricacies of producing multimodal content emerge due to the distinction between disciplines. As Macken-Horarik has already proposed,²⁵ two kinds of awareness in analysing multimodal texts remain: (1) awareness of a 'lack of fit' between categories of one mode applied to another; and (2) awareness of the deconstructive power of this kind of analysis, which reveals gaps in transmodal analysis. The multimodal texts in news websites are taken dominantly to encompass both text and visuals in different multimodal representation forms. On the other hand, reporters who get used to the old impressions feel difficult to learn new digital system in the newsrooms, which is also called as a generational gap, while the logics behind creativity for visual journalists are originality, functionality and aesthetics.²⁶ My analysis focuses on the two Finnish newsrooms and the communication between reporters and visual journalists.

But before conducting the ethnographic research in the newsrooms, I had my hypotheses about visual journalists' practices in visual transmediation.

Propositions and hypotheses

In recent times, print news appears to have gone through a transitional phase from prose to visual narrative,²⁷ as there reflects that visualization has empowered with the ability to tell the story itself. What needs to be emphasized, as a dominant trend nowadays, however, might be the platform transformation from newspapers into digital news. While the telling of the news used to focus on the verbiage, the rise in interest in digital visualization in recent years and the expansion of multimodal modes have resulted in a much broader consideration of professionals' work in this area. It is important to question what design practices might be applied in the visual transmediations in newsroom. Based on the aforementioned distance of conceptual ideation between reporters and visual journalists, two basic propositions were derived that contextualized the present analysis, as follows:

- Practitioners' work diverges in relation to what a project entails in the creative process. In the design domain, Nelson and Stolterman have provided multiple design judgments that include framing judgments, appearance judgments, quality judgments, compositional judgments, and navigational judgments.²⁸ During design ideation process, journalistic practitioners, both reporters and visual journalists, may have listed their important values according to the news content. The 'potential' that the project entails may spill over into representation forms according to the practitioners' judgments. What I have mentioned about creativity in digital visualization are functional value as well as aesthetic values.²⁹ The inclination of different values and judgments held by practitioners leads to the divergences in their practices. Although creativity maintains a focus on visual journalist's work, the final result of the project depends on the ideas perceived in the conceptual development.
- Complementarity and evaluative stance in terms of practitioners' work. In order to get at the evaluative stance being construed in practitioners' work, it is necessary to investigate how interdisciplinary communication is negotiated in multimodal visualization. In practice, news is perhaps more likely to be finalized as having 'potential' in relation to aesthetic judgments, while others maintain the ability to be verbalized in a better way. On the one hand, in the textual transformation into visual, aesthetic evaluation stands out in this respect, with perceptual ideation and creativity seeming to be especially important for designers. On the other hand, reporters insist to keep textual originality and journalistic accuracy in the visual transmediation procession. These two needs could be challenging to reach a balance. But for some reasoning of layout design or readers' interest, the reportage should be of interest by both reporters and designers, so that their work can be complementary mutually. While complementarity maintains a focus on creativity in visual transmediation, I contend again both functional and aesthetic values in visual variations of design practices.

The two propositions as to how design practices differ emerge when questioning the visual representation changes. As rephrased into specific hypotheses for the design ideation process, I come to the following movements for visual journalists:

1) From design to convention

In visual transmediation, there does exist a process to undergo both for reporters and visual journalists. Designers each collect a bundle of visual materials and then play with these visuals for the sake of their own tastes. While in newsrooms, the visual journalists sort the visuals according to the criteria, which factored in their sense of the newsroom's requirements: colour, size, kind, pattern, and composition of the visuals. After all, rules were 'given' and established to fit in the specific style. In this perspective, visual journalists design according to rules in most cases, in line with design principles.

2) Recognition of difference

For reporters and visual journalists, both visual and verbal multimodality, strictly styled under the newsroom's rules, would guarantee the success of brand communication with readers. However, in the production process, it is important to point out that difference emerges between visual and textual expression in multimodality. There has been the task of sorting visual transmediation to fit the imagined conceptions of how the representations tell the best of news stories, as well as to adapt them into the style of the news-to-be.

3) Consensus and negotiation

During visual transmediation, I predict more mental simulation from designers' part and more discussion among practitioners for development through trial and error. Such considerations from both reporters and visual journalists result in better suggestions for testing the conceptual thoughts. When the two groups come to consensus of how to realize visual transmediation in news websites, the sorting would give the visual representation a distinctive look.

4) Alliances through multiple disciplines

When realizing visual transmediation in newsroom, significant work has been done by multiple disciplines. In a news website, weight equals when comparing functional value and aesthetic value; yet as it turns out, each discipline has done their work in somewhat different ways, each using somewhat different principles: reporters have textual preference as a sorting method; visual journalists privileging visual over texts. With their collaboration in workflow, differences (between texts and visuals) are utilized to produce natural harmony.³⁰

I believe it is rare to focus on such an atypical group, visual journalists, to shed light of the logics behind their practices and design critiques. I nevertheless think that the investigation of logics helps explain changes in representation, orientation and presentation.³¹ In order for a closer observation of visual journalists' work and visual transmediation in procession, I conducted an ethnographic research in the two particular Finnish newsrooms. There emerged some further implication of the present argument and it seemed that distinct creative domains were likely to diverge in actual design practice, or to be more specific, in the newsroom culture.

Methods

Newsroom ethnography is the decisive method applied in this article due to the importance of spending considerable time in the fieldwork, where media workers as the study objects

carry out routines, activities and practices. My research methods were designed on the basis of exploring complex cultures due to the movement steered by a focus on news websites in the two newsrooms. The aims were to document and to understand the visual journalists' practices, so as to further interpret the current situation. To start the explanation of this complexity, I firstly had interviews with the dominant personnel who were in charge of the design department in the particular newsroom. After discussion with them, the access to the newsrooms was facilitated by the support from the design department. When conducting ethnographic research inside the newsrooms, one of the few prime principles was to study newsroom people's behaviour not created by my own setting. Rather, it should be studied in the context of their living of daily life, so that the research strategy inclines to unearth the shared meanings and practices of their real work during the visual transmediation process.³²

Followed by the typical methods for conducting an ethnographic research,³³ I decided to conduct the research in two Finnish newsrooms, respectively HS and LK. The first step for me is to identify the context in the two newsrooms. After some initial visits and interviews, the differences between the two newsrooms are obvious. I will elaborate the methodology session in the following part by discussing the particular case separately, as different research questions may be inaugurated through the different organizational cultures. The discussion intends to explain questions, such as the reasons for choosing these two newsrooms, and physical evidence, such as how to observe the journalists 'in situ'.³⁴

Helsingin Sanomat

HS is the biggest newsroom in Finland, considering its readership, number of pages, journalists and working facilities. Owned by Sanoma Group, HS is the largest subscription newspaper in Finland and the Nordic countries as well. The field observation in HS Design Department consisted of a total two weeks in April 2015. I spent time at the following locations: Graphic + Data (10 days), Monthly supplement (1 day), Saturday (1 day), Sunday (1 day) and Photography sections (1 day).

The fieldwork was conducted in mainly the Design Department just after a physical reconfiguration in HS newsroom. I realized there would be many movements and differences that influenced visual journalists from both the print and digital production teams. During the study, I observed daily meetings and the activities of their roles, such as communication and interaction with other collaborators in the projects. The methods were eminently qualitative and focused on the parameters of specifications in work, deploying multiple methods,³⁵ such as direct observation, semi-structured interviews, written records, photos and videos, as evidence to validate certain conclusions. The intentions were to broadly map the views and practices around the transition of print papers to digital versions. For the purposes of this article, I focused on examining what the research showed me about (the different kinds of) HS journalists' communication and attitudes (in the Design Department) to the different workflow, and how the change affected their own practices.

After surveying the visual journalists' experiences in visual transmediation, the fieldwork was emphasized on ethnographically mapping their workflow in the department, the communication between different desks and the exercises shadowed by schedule. The main interviewees who were enlisted in the research consisted of people with many years' experiences of news production practices: some had extensive knowledge and had carried out

many projects before, and others were only familiar with this practice in the department, like information design, to name one. People with varying levels of experience in HS newsroom were interviewed and their practices were recorded by field notes, photos and videos. After all, around 20 semi-structured qualitative interviews with information designers, data journalists, layout designers, photographers and reporters were collected, not alone other informal chats and discussions by their working space.

Lapin Kansa

LK was established in 1928 and is based in Rovaniemi, the capital of Lapland Province, Finland. Owned by Alma Media, LK is considered to be the biggest subscription newspaper in Lapland area. In January 2011, the daily paper changed its format from broadsheet to tabloid. Confronted by the decreasing circulation and subscription in a global scale, LK joined Lännen Media's (LM) collaboration in Western and Northern Finland by the end of 2014, which formed a joint national editorial team to produce content for print newspapers as well as their digital, online and mobile channels. I had several interviews with Mr Antti Kokkonen, the Editor-in-Chief of LK, together with some informal chats about the changes and happenings in the newsroom. This facilitated me the access to the fieldwork in LK's newsroom during March 2015.

I conducted my ethnographic research in the newsroom right beside the visual journalist, Ms. Miila Kankaanranta. The two weeks, approximately 70 hours of observation, notes and recording, suggested that LK was preparing the newspaper with a more digital thinking. During my visit, the Internet producers were launching the demonstration for LK's new website. According to the interviews with the producers, the Beta version of the new website would be ready in June. The Editor-in-Chief, Mr Kokkonen, said, 'more possibilities of visual journalism, such as good photos with bigger proportion would emerge'. In this case, there would be more and more online news services for readers and the role of online news would be heavily increasing. I gradually realized that there should be more changes and movements in visual journalist's workflow than just 'making photos bigger' during the transit to focus more on web news in LK newsroom. Therefore, in February 2016, I revisited LK newsroom for one week to take a closer look at whether there was any difference in this visual transmediation in this regional newsroom.

As a regional middle-sized newsroom, LK has fewer resources than HS, which means it is impossible to have exactly the same working model as HS. In the LK newsroom, there is only one visual journalist working for graphics, illustration and other visual impressions. The Editor-in-Chief argued that LK was trying to seek more innovation, especially after setting the pay wall subscription system since June 2015. This was also one of the reasons why newsrooms in Western and Northern Finland needed cooperation. Therefore, I planned to sit beside the visual journalist during the fieldwork. The collaboration between the visual journalist and the reporters seemed different from that in HS newsroom, which made it difficult for reporters to adapt themselves in the visual transmediation with the function as information disseminators. Through similar research techniques as in HS, I intended to analyse the situation in a smaller Finnish newsroom, other than an ambitious comparative analysis.

Results

Ethnographic research methods are applied in this article, as the starting point of any ethnographic writing ‘constitutes a valuable and distinctive way of asking and answering the recurrent question in an anthropological enquiry – “what does it mean to be human?”’³⁶ In my research, it is defined as ‘a research approach that produces a detailed, in-depth observation of journalist’s behaviour, beliefs and preferences by observing and interacting with them in a natural environment.’³⁷ From the fieldwork in the newsrooms, it seemed that all journalists were asked to think about ‘digi(tal) first’ when taking on new tasks while figuring out what this really meant in workflow. Dynamic data visualization is one of the challenges that push journalists to reinvent their professions. Multimodality presents new challenges for both reporters and visual journalists who are being compelled to craft multimedia as part of their daily work.³⁸ For visual journalists, they consider both print visualization and digital versions, while different media impose revolutionary thinking on reporters’ work.

Miila Kankaanranta, the visual journalist in LK, used to describe the plight she had come across in communication with reporters when making infographics from print to digital version. As introduced in the previous part, LK has joined LM and cooperated with journalists in different newsrooms from Western and Northern Finland. Therefore, Miila has created information graphics as exclusive quality content for its partner newspapers. What attracts attention here is that information graphics encompass different forms of information design, such as infographics that communicate complex ideas and data in a clear and beautiful way. On 26 February 2016, Miila talked with the corresponding reporters, with copies to the Internet producer from LK, Editor-in-Chief and another graphic designer from LM. In the email, she explained explicitly about the difference between print and digital infographics on the basis of her experiences as a visual journalist. Here is some extract from her email.

The (info)graphics should be working in both platforms, print and digital. But the print graphics rarely work online with the same format, as we need to take the resolution into account. The (info)graphics usually contain text almost without any exception, in which cases readability becomes the most significant for visualization. Different newspapers have different criteria for the maximum image. It depends on whether the image is the main picture or not. As a result, graphics should be done in accordance with an acceptable pixel. Of course, it is another matter if only the graphics may enlarge by a further clicking or mouse-over.

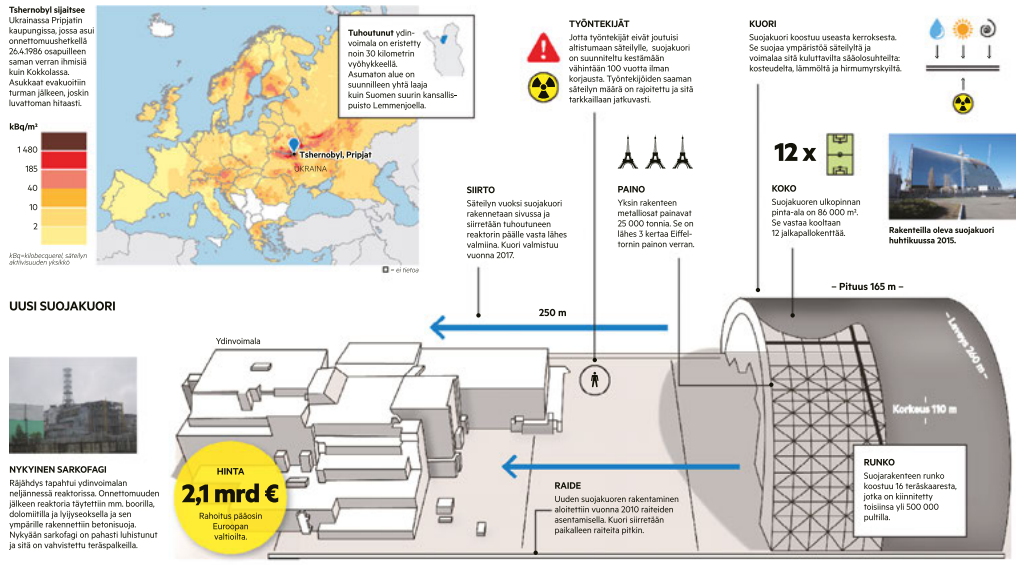
For Miila, the visual transmediation from print to digital version became a challenge, and apparently, some reporters did not understand what the dilemma was to convert the print ‘image’ into a digital one. What was more was that they hoped the digital infographics worked in all media. The visual journalist, however, got the idea that infographics was not ‘image’ and visual transmediation in this case was never as easy as filling the image.

After the discussion with colleagues in February, Miila had another conversation with reporters. In March 2016, Miila needed to finish an infographic design of a plant to accompany the news texts. As she usually created the print version first, the reporter asked for a visual transformation for the website. The print item was a seven-column assembly (Figure 1), but there was not, in itself, even slight change (size, colour, etc.) to be applicable to the Internet. In the visual transformation, there should be some changes when the pixel width was fixed in digital visualization. As a result, the design in online version included both the plant’s main photo in addition to two infographics (Figures 2–4).

The situation Miila described above is the image of what the visual journalist team faces in general, and how the communicative gaps are working in visual transmediation in

30 vuotta sitten räjähtänyt Tshernobylin ydinvoimala saa suojakseen uuden kuoren ensi vuonna

CESIUM-137-LASKEUMA ONNETTOMUUDEN JÄLKEEN



Lähde: European Environment Agency (EEA) UNSCEAR, European Bank for Reconstruction and Development (EBRD) Wikipeedia, Chernobylgate.com

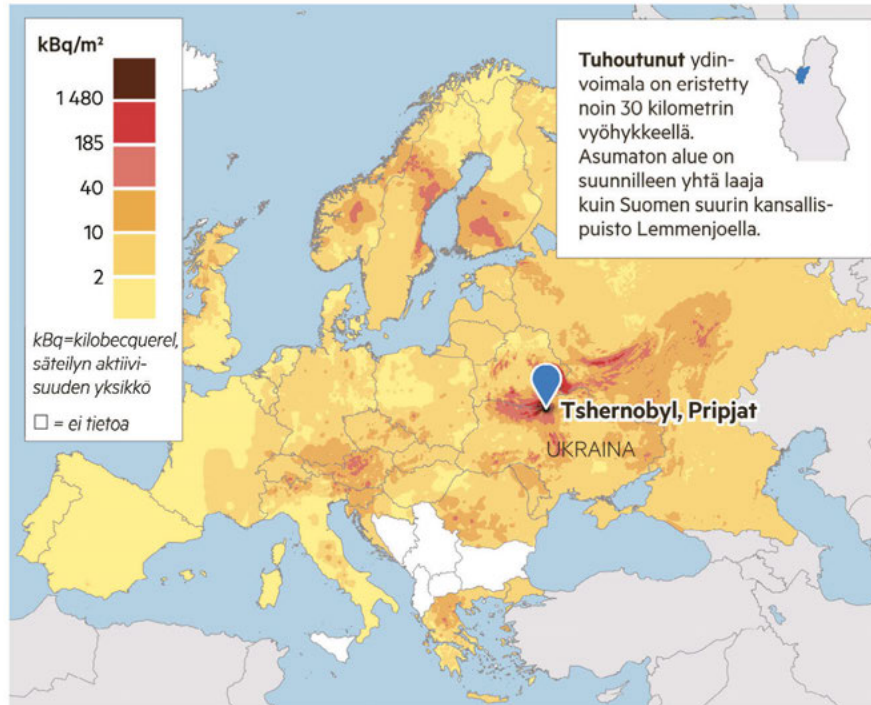
Figure 1. Seven-column assembly applied in Lapin Kansa’s tabloid newspaper. Graphics: Miila Kankaanranta, used by permission.



Figure 2. Plant main photo used in LK’s online version.

particular. Especially for a pre-stage converged newsroom, either LK or LM, the pressure is great to adapt new organizational culture as well as to produce integrated stories. As Brannon described her subjects: ‘They felt the pressure of immediacy and often failed to take further

Cesium-137-laskeuma onnettomuuden jälkeen



Tshernobyl sijaitsee Ukrainassa Pripjatin kaupungissa, jossa asui onnettomuushetkellä 26.4.1986 osapuilleen saman verran ihmisiä kuin Kokkolassa. Asukkaat evakuoitiin turman jälkeen, joskin luvattoman hitaasti.

Lähde: European Environment Agency (EEA)

Figure 3. Infographics used in LK's online version. Graphics: Miila Kankaanranta, used by permission.

steps to develop content suitable or the medium'.³⁹ The production of LK's online, however, is highly influenced by the collaboration and co-involvement through multiple disciplines.⁴⁰ This means that the knowledge of immediacy and the communication between different desks are both dominant in the feature journalism. My concern is to go above revealing how the communicative gaps are brought about by the disciplinary distinction exercised in newsrooms. I realize that I need to consider this as systematic as possible, so as to avoid simply describing what communication tensions are.

Creative teamwork in multidisciplinary teams is a topic of interest to cognitive psychologists as well as social/organizational psychologists. For example, researchers have found that representational gaps in the multidisciplinary teams in the production process are more likely to spark conflict, on the social/organizational side.⁴¹ Yet by diving beneath the surface features of the 'conflict' in the newsrooms, communicative gaps between journalists do exist, instead of representational difference as a major contribution towards unpacking the tensions.

Regardless of the amount and the ways to be embedded in the visual transmediation, complex graphic representations⁴² (e.g. infographics consisting of data-rich, multipanel computer visualization) are resilient to the journalists' communication and application. The

30 vuotta sitten räjähtänyt Tshernobylin ydinvoimala saa suojakseen uuden kuoren ensi vuonna

HINTA
2,1 mrd €

Rahoitus pääosin
Euroopan
valtioilta.

1. TYÖNTEKIJÄT

Jotta työntekijät eivät joutuisi altistumaan säteilylle, suoja-kuori on suunniteltu kestä-
mään vähintään 100 vuotta
ilman korjausta. Työntekijöiden
saaman säteilyn määrä on ra-
joitettu ja sitä tarkkaillaan jat-
kuvasti.

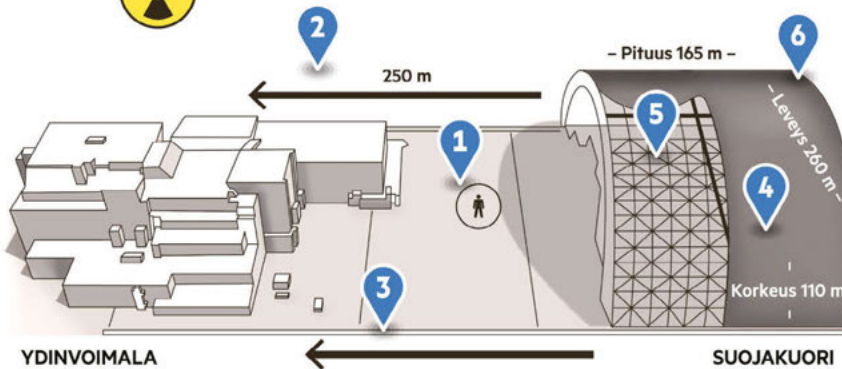


2. SIIRTO

Säteilyn vuoksi suoja-kuori
rakennetaan sivussa ja
siirretään tuhoutuneen re-
aktorin päälle vasta lähes
valmiina. Kuori
valmistuu vuonna 2017.

3. RAIDE

Uuden suoja-kuoren ra-
kentaminen aloitettiin
vuonna 2010 raiteiden
asentamisella. Kuori siir-
retään paikalleen raitei-
ta pitkin.



4. KUORI

Suoja-kuori koostuu useasta
kerroksesta. Se suojaa
ympäristöä säteilyltä ja
voimaa sitä kuluttavilta
sääolosuhteilta: kosteudelta,
lämmöltä ja hirmumyrskyiltä.



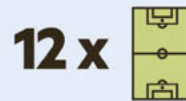
5. RUNKO

Suojarakenteen runko koostuu
16 teräskaaresta, jotka on
kiinnitetty toisiinsa yli 500 000
pultilla. Yksin rakenteen metalli-
osat painavat 25 000 tonnia. Se
on lähes 3 kertaa Eiffel-tornin
painon verran.



6. KOKO

Suoja-kuoren ulko-
pinnan pinta-ala on
86 000 m². Se vastaa
kooltaan 12 jalka-
pallokenttää.



Lähtect: UNSCEAR, European Bank for Reconstruction and Development EBRD, Wikipedia, Chernobylgallery.com

Figure 4. Infographics used in LK's online version. Graphics: Miila Kankaanranta, used by permission.

disciplinary separation has resulted in theoretical and empirical gaps in our understandings of communicative constructs. Given our analytic attention to knowledge diversity and performance,⁴³ the communication between visual journalists and reporters explains inconsistent link during the visual transmediation. The ideational diversity leads to different

performance in their practices. As Miila's communication implied, some reporters were in the middle of adapting the visual transmediation thinking in their own practices.

It is noteworthy here that this shows how important and valuable it is to be very specific about the particular responsibilities of professions being addressed. Otherwise, journalists are just cutting and pasting material from the traditional papers to a website according to some researchers, such as Barnhurst.⁴⁴ Reporters' ideational thinking about the visual transmediation has emerged from their experiences as the journalists who record and tell the truth by texts. Yet, dividing visual representations into the kinds of 'syntax'-like objects is generally doomed to failure, not alone multimedia thinking during the process. Therefore, such communicative gaps are, in short, created by nature and the 'gaps' between the reporters and visual journalists are dependent on the professionalism distinction. In other words, reporters and visual journalists have their own intentions, in which cases the different principles they hold lead to different representations. As we have seen from Miila's instance, this is precisely formed case-by-case following the principles in the specific organizational culture.

In addition to these kinds of thoughts about the communicative constructs, graphic redefinition influences the interpretation of information graphics as well. One of the first things I was made aware of upon entering HS Design Department was that the Web team was working in harmony with the content being created by the various news desks. This was most obvious in the fact that visual journalists were in charge of both infographics and data visualization. Although both of the designs communicate and analyse statistical data and complex information, infographics integrate multiple semiotic modes in a manner of composition, such as manipulating layout space.⁴⁵ Meanwhile, dynamic data visualization is 'more interactive, allowing viewers to explore, manipulate unedited data and discover their own story.'⁴⁶

For a visual journalist working in a pre-stage converged newsroom, like Miila, it is a challenge to make both the print and digital graphics with exactly the same pictorial content. In most cases, the quality of the digital infographics invariably suffers, as the designer determines that the information is more important than the visual part, such as photo and illustration. It seems that the digital infographics are still subordinated to the print version due to the organizational resources, time frame and the like. But for a bigger Finnish newsroom, HS provides a more attentive visual manual for both the spatial layout and conceptual guidelines of the contents during the process of visual transmediation.

Since the visual journalists take various media into consideration and employ multiple practices to cover multifaceted media events, not every visual production is transmediable. The visual transformation depends on the news story, the photograph, the layout space, and even the visual journalist's style. Thus far, the majority of the graphic representation spreading across different media platforms is simply repurposed. The visual journalist from HS, Petri Salmén, had a clear idea to make the 'Stadin derby' infographics for both print and digital versions (Figure 5). Occupied half of the spread in the print version, the infographic featured a schematic chart that provides a general view of the two football teams, together with two eye-catching football stars and their detailed career information. Meanwhile, in the digital version, the big silhouettes were removed due to the cramped layout plan. Essentially, what we have seen are two different kinds of infographics with similar diagrammatic elements – charts, numbers and colours. The difference between these two infographics serves

Print version



Digi version



Figure 5. 'Stadin derby' infographics with print and digital versions, published on April 23rd, 2015. Graphics: Petri Salmén, used by permission.

the broader goal of allowing viewers to access the schematic chart, but also performs some similar supportive clues for conceiving purpose.

In Petri's production process, it went smoothly during communication with reporters and layout designers, as the team members are familiar with the visual transmediation. Another reason of such successful communication went to the digital system where the practitioners, including reporters, visual journalists and layout designers, could share ideas and contents. With the improvement of content sharing, visual journalists thought more about the ideation and design, rather than communication with other collaborators. This is absolutely different situation compared to the past, as the visual journalists nowadays can see the planning earlier and obtain reporters' requirements in a better way than paper ordering. In this sense, technology eases the communication tensions. After all, visual transmediation in this case is not only about moving the graphic objects into a cramped layout, but the essence of transmedia storytelling as well. Exploring a better way, either in graphic redefinition or in technological enhancement, is one of the focal point of unpacking the communication tensions in newsrooms.

Conclusion

My ethnographic work took place in different newsroom cultures, which clearly shaped the dominant views and discourses from mainly visual journalists' perspective. Tensions between

word-people and picture people, have long presented in the newsroom. During communications with visual journalists, tensions are inflamed when deadlines and logics challenge professional identities. For the 'hard news' journalists, the main value of news, no matter in print or in digital format, is the provision of story ideas and sources,⁴⁷ while in-house visual journalists are driven largely by both functional and aesthetic values.⁴⁸

As a researcher who pays much attention to visual journalists, it has been provocative to work with them for a period and get insights from their communications in the newsrooms. I realize that divergences from the norms have formed due to the communication tensions, and I may have missed these complexities if my research had focused only on one newsroom. It is clear that communication tensions in the visual transformation from paper to digital provide the grounds for contesting the professionalism of visual journalists' work. However, converged newsrooms, apparently, have been looking for a more economic and efficient way for reportage. It leads to a significant emphasis on digital news empowerment and collaborative journalism, as a way not only to connect geographically distant journalists in different newsrooms but also to provide a sense of organizational culture as one team.

Nowadays, HS has also launched an advanced system to upload digital news for facilitating the editorial workflow. Both reporters and visual journalists get a corresponding html code from the technical team, so that they can directly embed either texts or images into the website. One of the information designers told me that it took visual journalists some time to engage in the new system and enable authentic story-telling, whilst reporters took even longer time to learn the new system. The situation is understandable as reporters' workflow is completely different from the style when they started their career in journalism. In the varying environments, it is challenging to look beyond the changes happening in newsrooms. But for each of the journalists working inside and see the 'general picture', the dominant trends and attitudes are revealing collaboration both in team members and between different newsrooms.

Notes

1. Souza, "Investigating Design Thinking," 1.
2. Bowen, Bowers and Wright, "The Value of Designer's Creative Practice," 175.
3. Cummings, "Knowledge Sharing," 356.
4. Deuze, *Media Work*, 42.
5. Xenakis and Arnellos, "Interaction Aesthetics and Affordances," 57–58.
6. Deuze, *Media Work*, 13.
7. Wilson, *Understanding Journalism*, 28.
8. Lehtisaari et al., *Media Convergence and Business Models*, 5.
9. Caple, *Photojournalism*, 142–73.
10. Kress and van Leeuwen, *Reading Images*, 183–6.
11. *Ibid.*, 25–27.
12. Macken-Horarik, "Interacting with the Multimodal Text," 6.
13. Johnson, "Dewey's Bit Idea," 39.
14. Kress and van Leeuwen, *Multimodal Discourse*, 67.
15. Beck, *New World of Work*, 73–76.
16. Nonaka, "Organizational Knowledge Creation," 15.
17. Moen, *Newspaper Layout and Design*, 136.
18. Kress and van Leeuwen, *Multimodal Discourse*, 66.
19. Mitchelstein and Boczkowski, "Between Tradition and Change," 576.
20. Bowen, Bowers and Wright, "The Value of Designer's Creative Practice," 191–192.

21. Lawson, *How Designers Think*, 14–19; Johansson-Sköldberg, Woodilla, and Çetinkaya, “Design Thinking,” 125–126.
22. Krippendorff, *The Semantic Turn*, 23–24.
23. Wylant, “Design Thinking,” 228.
24. Paletz, Schunn, and Kim, “Conflict and Analogy,” 1.
25. See note 12.
26. Christensen and Ball, “Dimensions of Creative Evaluation,” 118.
27. Kress and van Leeuwen, *Reading Images*, 60–62; Caple, “Intermodal Relations,” 125.
28. Nelson and Stolterman, *The Design Way*, 139–149.
29. Casakin and Kreitler, “Correspondences and Divergences,” 668–669.
30. Kress, “Rhetorical Work,” 141–142.
31. Kress and van Leeuwen, *Reading Images*, 79–86; Caple, “Intermodal Relations,” 132.
32. Mullick et al., “The Basics of Ethnography,” 894.
33. Crowley-Henry, “Ethnography,” 38.
34. Hughes, “The Place of Field Work,” iii.
35. Zha, “The Role of a Visualist,” Chap. 3.
36. Gay y Blasco and Wardle, *How to Read Ethnography*, 1.
37. Ireland, “Qualitative Methods,” 26.
38. Brannon, “Maximize the Medium,” 100.
39. Brannon, “Maximize the Medium,” 106.
40. Zha, “The Role of a Visualist,” Chap. 2.
41. Paletz, Schunn, and Kim, “Conflict and Analogy,” 2; Pelled, Eisenhardt and Xin, “Exploring the Black Box,” 20–22.
42. von Engelhardt, “Graphic Objects,” 23.
43. van Knippenberg, De Dreu and Homan, “Working Group Diversity,” 1013–1015.
44. Barnhurst, “Newspapers Experiment Online,” 5.
45. Bateman, Wildfeuer and Hiippala, *Multimodality*, 263.
46. Schwalbe, “Infographics and Interactivity,” 432.
47. Williams, Jorgensen and Wardle, “A Multi-site Ethnography,” 117.
48. See note 26.

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CHAPTER 8

Discussion and Conclusion

This dissertation consists of articles that are already published or are in the process of being published. In addition, it contains a synthesis that consists of an outline of the research objectives of the dissertation as a whole and of the individual articles. In this final chapter, I summarise the discussion and offer directions for future research and practice in visual journalism. I have shown in Chapter 2 and Chapter 3 how the study of visual journalistic professionalism encompasses a broad range of disciplines related to media convergence and visual communication. I have also shown that the research on in-house visual journalists has not yet focused on their work routines, at least at a communicative level in the newsroom. The chapters in the middle of the dissertation have explained the scope of their work, including the working environment, design disciplines and communication, as a basis for expanding on this study.

8.1 Lessons learned

It is essential now to summarise the overall messages of this dissertation. There are certain important lessons to be learned – not only for the current practices of in-house visual journalists but also for a more general approach to understand how these practices affect the challenges of crafting a visual information structure for news websites.

First, it must be emphasised once again that media and newsroom convergence is a backdrop for this dissertation. This means that we always have to consider the media environment and the work that has already been done in the areas related to visual journalism. To this end, the dissertation offers an outline of the developments in media production while remaining embedded in the central question surrounding journalistic practices. Therefore, Chapter 2 discusses media convergence from three perspectives and empirical research in two Finnish newsrooms. Thus, ethnographic research methods have been applied in this dissertation to underline the value of such empirically grounded knowledge. In addition, this chapter contains the literature review. It focuses on the structure of in-house visual journalism from institutional, organisational and producer perspectives. Much of the literature review and many of the visual journalistic examples in this chapter deal with the occupational ideology of in-house visual journalists in newsrooms against the backdrop of the current wave of media convergence around the world.

Chapter 3 explores the visual literacy primer for constructing the visual information structure of news websites. It begins with an introduction to

the basic values and classic design principles (e.g., Gestalt laws) that have been widely accepted. Such hard skills, described by Ganci and Lahey (2017), skew toward technically centred skills – specialized tools, methods and knowledge. But the highlight here is the suggestion that it is necessary to think about established practices and to reconsider their value in the new media environment. This reconsideration is necessitated by the evolution of visual literacy in online visual journalism. Technological developments require us to consider what digitisation and multimedia journalism have brought into our lives. Not only do we consider combinations of new and old media and choose appropriate methods for delivering messages, but we also understand the different demands of online communication based on visual semiotic thinking. In this chapter, the Gestalt approach is discussed from the perspective of visual production, whereas the semiotic approach positions visual segmentation as being a result of contextual choices. These approaches include the cognitive thinking in the visual transmediation of news websites. Facets such as culture, environmental factors, expectation and memory influence viewers' perceptions of visual information.

In the last part of this section is the consideration of interactive information graphics in news websites. Having discussed a broad range of characteristics of various expressive resources that are produced and reproduced across multimodal communication, I pay particular attention to how the new media have brought about an overwhelming change in news websites. Therefore, the importance of information visualisation and data visualisation is emphasised. Information visualisation and data visualisation lead to the possibility of different forms of expression as well as multifunctions (e.g., communicative, technical, aesthetic and interactive) in the delivery of interactive information sources. In short, I have attempted to introduce the theoretical foundations and practical tools for investigating the communicative artefacts and functions in interactive information graphics. Finally, the proposed merits of interactive visualisation are applied to the exploration of the distinction between cross-media production and the multi-platform distribution of multimodality. This requires an explicit understanding of the modes that contribute to one's areas of interest and the ways that the physical carrier of visual modes broaden insights on meaning making.

I would also like to reiterate the goal of this research. First is the emphasis on demonstrating co-involvement and collaboration to explain the core of multimodality in online visualisation from a visual semiotic perspective. More important, it provides a useful approach for explaining the relevance of

practices in the newsroom from the visual journalist's perspective. Through the observation and investigation of visual informational sources in news websites, we have seen how visual journalistic practices influence the construction of the visual structure. This is then extended by the publication in this dissertation, starting from elaborating the design principles of multimodality in news websites (Chapter 4). The articles in this dissertation provide important insights from different angles, insights and theories. This has allowed for the presentation of visual journalists' capacity for innovation and experimentation in constructing a visual information structure as well as their adaptation of the journalistic ideology in the multimedia environment. Therefore, the ideas set forth in the articles are intended to complement rather than compete with one another.

This dissertation is primarily a case study of communication design in *Helsingin Sanomat* and *Lapin Kansa* – two Finnish newsrooms. The main idea in collecting the research data was to get closer to the visual practitioners in the newsrooms and to find their roles both in the basic functioning of visual expression and in the organisational environment. Thus, the use of ethnography as a research strategy validates one of the fundamental theoretical and methodological approaches in social science studies (Whitehead, 2005). Aldiabat and Le Navenec have offered three important reasons for a particular interest in using ethnographic research to understand socio-cultural events: (a) it helps researchers to document, to understand and to interpret the alternative realities, from the participants' point of view, that are salient to understanding the lived experiences of people in a particular culture; (b) it allows for a deeper understanding of social and cultural meanings grounded from empirical instances; and (c) it is ideal for exploring complex cultures (Aldiabat & Le Navenec, 2011, p. 3–4).

I needed to have a better understanding of what visual journalists are creating in the newsroom and how they are speaking out through visual production. The relationship between journalism and ethnography is not new; we have seen many case studies in academia. Online news sociology (Domingo & Paterson, 2011) seems to drive qualitative research in the social sciences. Participant-observer-based fieldwork empowers an objective perspective on the actual development of online journalism production in newsrooms. Therefore, ethnographically informed methods such as observation, interviews, photography and videography and notetaking are considered crucial in research. The methodology details are elaborated in Chapter 7.

Based on the ethnographic research conducted in the two newsrooms, I argue that soft skills in visual journalists' work are difficult to measure but appear to be equally essential in today's newsroom. Although media convergence in newsrooms has received much attention, the role of softer skills for visual practitioners in the visual transmediation of news media should be examined. Soft skills are often equated with the ability to communicate effectively and to work cooperatively with others as part of a team (Ganci & Lahey, 2017, p. 7). This discourse unfolds in the dissertation by deepening our knowledge of how aesthetic inputs create information salience (Chapter 5), analysing the in-house visual journalist's situation and ideology in the newsrooms (Chapter 6), and investigating the origins of the communicative tensions between visual journalists and reporters (Chapter 7). To this end, I provide a solid foundation for the research by explaining the visual transmediation from print newspapers to news websites.

Hard skills should not be ignored in the process, as they often involve the techniques and procedures for visual reproduction. So, I have situated the visual representation analysis as a visual literacy primer for practitioners in Chapter 3. It leads to the possibility of different forms of expression and various disciplines as a theoretical foundation. The exploration of the practitioners' work provides an understanding of the practical methodologies necessary for investigating communicative artefacts, visual materials, media and reproduction processes.

After all, visual journalistic professionalism is conceptualised within the specific newsrooms and visual production in news websites. My research for this dissertation and my interest in the topic have addressed the new requirements for creative workers in newsrooms, following the visual identity held by the newsroom culture. In the process, multi-faceted endeavours from team approaches in visual journalism have emerged for a better reader experience on digital platforms. Yet, there still exist communicative tensions between visual journalists and reporters during visual transmediation. Therefore, I have found it necessary to focus on previous practices as well as the complementary stance brought about by the new media.

8.2 Further discussion and implications

Visual transmediation and branding

The matter of *where* and *how* and *by whom* and *under what conditions* meanings are made – beyond the means of speech and writing – is becoming prominent at an astonishing pace. When looking through what happened to the process

from print papers to news websites, visual transmediation is becoming a creative thinking tool. Given my interest the approach is a practical one and the focus is on some aspects of contemporary world of visual communication in news websites.

Deliberating on the various visual tools applied in the visual transmediation process (Chapter 3), visual appearance still remains privileged, in addition to communicating news content, enhancing usability, creating hierarchy, and conveying a personality (Allen, 1936; 1947). In practice, visual transmediation in news websites is in compliance with some visual guidelines applied in print newspapers. The fieldwork affirmed that these views are still common, though different interviewees held slightly different opinions. The Editor-in-Chief usually emphasised news contents are at the mainstage of news production, while visual journalists insisted on the journalistic role of the design while seeing the others as subordinate functions. The importance of telling the news was stressed.

According to Lamberg's interviews (2015), in-house art directors emphasised the design's role in building the paper's brand, while they did not recognise their work governed by branding. So, he thought the brand values rarely affected their design decisions on the whole. This is partially supported by the fieldwork in this study. When looking through the target newspapers in Lamberg's research, they were all quality papers with a wide popularity in domestic newspaper production – *Helsingin Sanomat*, *Aamulehti*, *Turun Sanomat*¹³, *Etelä-Suomen Sanomat*¹⁴, *Ilta-Sanomat*¹⁵ and *Iltaalehti*. Yet the visual journalists from *Lapin Kansa*, as a smaller sized newsroom, usually obtain visual guidelines from the head art director based in *Aamulehti*. In general, they have clearly recognised their work as being framed by branding and visual manuals. It does not reflect only negative part though, as the guidelines might be indicators of how the brand values can be actively thought about and applied in the daily work.

Although for Finnish newspapers, visual transmediation in news websites is second to the news itself, visual transmediation can be seen as part of the overall branding of a newspaper, as it is a visual representation of print papers. In the design process, bigger newsrooms may adapt themselves into 'digital-first' policy faster, and it is possible that their visual journalists use the brand values actively.

¹³ *Turun Sanomat* is the third largest quality newspaper in Finland with about 213,000 readers (MAF, 2014). It is published in Turku, southwestern Finland, and is circulated in the surrounding region.

¹⁴ *Etelä-Suomen Sanomat* is a mid-sized regional paper with about 108,000 readers (MAF, 2014). It is published in Lahti, southern Finland, and is circulated in the surrounding region.

¹⁵ *Ilta-Sanomat* is a nationally distributed popular paper, with about 544,000 readers (MAF, 2014). It is owned by the same Sanoma corporation as *Helsingin Sanomat* and their head offices are in Helsinki.

At the same time, it seems that design decisions in downsized newsroom tend to be based on considerations of the head office as well as brand values. The visual journalists' experiences in visual transmediation help to identify their role in building up the overall branding of papers. On the one hand, it depends on the speed for the quality papers to go through the gradual changes. On the other, the practitioners' capabilities as well as professional experiences also have impacts on the face-lifts in crafting visual representation in news websites.

Gatekeeper in visual transmediation

Although visual transmediation concerns the matter of *where* and *how* and *by whom* and *under what conditions* meanings are made – beyond the means of speech and writing, it does not eliminate the importance of old framings. The goal is not to draw new boundaries either; rather, it provides a new perspective to look through the relationship of different genres, instead of separating them completely. It is time to consider the gatekeeper in visual transmediation when something unfamiliar emerges in the seemingly “stable” disciplines.

The fieldwork conducted in the two Finnish newsrooms yielded interesting accounts about the specification of visual journalists of newspapers. In addition to their verbal accounts, I also got some in-house materials, such as brand manuals, photos and video recordings of their workflow, which included further information on the values in their professionalism. Looking at all the materials, one could see how visual journalists were genre-specific and what values are prominent in the practice. This makes it possible to outline some stereotypical views of the nature of their professionalism.

As discussed in Chapter 7, the newspapers for this study were chosen purposefully, so that they would be typical cases of quality Finnish newspapers, with one in the South and the other in the North, and together would represent different situations of the newspaper market. Meanwhile, the first-hand experience of the topical research came from the selected interviewees in the newsrooms, who should represent both complementary and differing points of view from their professionalism. The results have shown that larger newsroom has a hierarchical organisational structure, and this transfers some power to the individuals and practitioners. Meanwhile, visual journalists in smaller newsroom may get more guidelines from management, though they do not see it as an obstacle of creativity.

In addition, it is clear that visual transmediation acquires knowledge not only from those who master design knowledge, so-called ‘inside people’

(Macdonald-Ross, 1989), but also from those who perform their presence by the means of writing – reporters. The production of a newspaper always involves a gatekeeping process (Shoemaker & Vos, 2009), not alone co-involvement and collaboration effects in multimodality in online visualisation. That is to say, there are two groups of key people who decide what really matters in the visual transmediation process – visual journalists and reporters. Lowrey (1999) found that gatekeeping can be distributed among several individuals and groups in the daily production of a newspaper, as the newspaper is then always the product of two minds – the designer’s and the reporter’s. Visual journalists keep the visualisation in compliance with the paper’s values while reporters manipulate the quality of written texts.

In this sense, the gatekeeping process of visual transmediation is fully rational. Visual journalists often possess higher competence in their specific areas than reporters, while reporters conventionally get used to express their opinions by words instead of visuals. It could be the visual journalist who keeps the aesthetic tastes and tends to look for heuristics in visual transmediation process, and it could be reporter’s responsibility to find the story and complete control over the news content.

8.3 Reservations and limitations

Of the specific areas that I have selected to explore in detail, several have presented novel aspects that extend the importance of visual reproduction and the current state of knowledge, together with the practices for constructing the visual information structure of news websites. They help create stepping stones for subsequent researchers and designers. The values of visualisation in print newspapers are especially pertinent to the discussion at hand, while their reconsideration could provide adaptations for multimedia applications on digital devices.

I have recently noticed related features, such as digital mapping, in interface studies (cf. Lammes, 2017). The interfaces of such applications invite users to engage with images on screens and to show how engagement changes the status of the image. The distinctions between such discussions and the scope of this dissertation are clear. On the one hand, interfaces are intended to invite viewers to touch, to talk and to move with them. These interfaces are focused mostly on interactive effects on the appearance of the image, while the interactive function on news websites is regarded as one of the multifunctions in multimodality in the visual information. Interfaces are the representation of information and

are augmented by prompting viewers interaction that are fed back into the interfaces (Coates & Ellison, 2014, p. 23). In so doing, meanings in the interfaces have been created in the mediators by the actions of translating between and inviting movements of users, images, vehicles, etc. Yet, in the visual information structure of news websites, meaning making is obtained by the creator's making sense of the modes as well as the landscape, and it is then perceived by viewers from the shapes, forms and features within the context.

From this perspective, research on how readers consume visual information structures will be useful for recalling how visual transmediation is presented in news websites. Reader consumption of news in online and print newspapers, however, seems to be more dependent on the news category, reader gender and interest in a particular topic than on formats – print or online (D'Haenens, Jankowski, & Heuvelman, 2004). From a methodological perspective, ethnographic research was fruitful for the purposes of this dissertation. However, it may not necessarily be useful for the analysis of visual journalistic professionalism as a whole, especially when the research data were collected from two newsrooms, even though they are representative of the Finnish environment. Ethnographic research works well in this context because it intersects with some research on ethnographic knowing and visual perception (cf. Pink, 2011) as well as journalism (cf. Hermann, 2016). At the same time, from a theoretical perspective, it is effective for collecting empirical research data. Thus, this method was used in this dissertation to investigate the situation of communication design in news websites. It delivers valuable gains in visual transmediation from print newspapers to news websites.

8.4 Final remarks

The primary research question of this dissertation concerns the maintenance and projection of visual journalistic professionalism through visual representation in the context of the opportunities and challenges posed by media convergence. This question is asked with the assumption that visual transmediation in journalism is essentially a field with a weak academic grounding, with little attention by academics to how the way that newspapers are presented. It has been taken for granted in print newspapers and digital platforms, though newspapers communicate ideas, mood and style not only through written texts but also through visual design. By the end of my fieldwork in the Design Department of the *Helsingin Sanomat* newsroom, Petri Salmén, a graphic producer of the four-person information design team, expressed his

appreciation. He said, “No one has paid so much attention to our work. We feel curious but happy that you joined us here for some time, though you are just sitting beside and making your own research.”

This dissertation investigates how the visual information structure of news websites is framed, taking insights from the visual representation to the reproduction issues relevant to the practitioners’ work. In addition to the findings of the four articles, the overall conclusion of the dissertation is that visual transmediation is a prevailing feature of the visual journalists’ professional life that is frequently mobilised to serve the function of multimedia delivery. It is engaged on an institutional level to protect journalistic values, specific design skills and the news organisation’s identity. Visual journalistic professionalism can therefore be conceptualised within the specific newsroom as well as visual production.

As a researcher with academic interests in both journalism and design, I found the exploration of this interdisciplinary field challenging and interesting. Researchers introduced to graphic design may occasionally wonder about the value of pursuing painstaking analyses of everyday communicative situations in journalism, while researchers in other fields may also find some insights on visual journalism and visual reproduction on multimedia platforms. Extending the visual journalistic input vocabulary through identifying specific newsroom practices has been demonstrated to be a valuable approach. A potential benefit is the prospection of communication between practitioners during visual transmediation, while bounded by technological, organisational and institutional values. I believe that a careful examination of these ideas can reveal important aspects of our capability to manage complex visual practices in newsroom life, for both visual journalists and reporters.

Although the approaches used to gather the research data provided interesting results and raised awareness of visual journalism in the newsroom, they bring further thinking about the research objects. Aiming to improve the relationship between visuals and texts in news websites, this dissertation highlighted the communication between visual journalists (people dealing with visuals) and reporters (people dealing with texts), thus allowing readers to become aware of visual transmediation from the visual journalist’s perspective. This offers the potential to extend the current study of visual journalism in the domains of visual output and audience feedback to other digital platforms.

Furthermore, this research can be beneficial to researchers, practitioners and others with an interest in visual journalism. Learning about the importance of communication design for news websites, whether on digital platforms or

in physical working environments, increases our understanding of the visual transmediation process. Visual journalists do not deal with visualisation only. A visual journalist with little concept of journalistic obligations, the social context of the field and the possibilities for or limitations of the latest forms of visual journalistic practice may well do the newsroom more harm than good.

This research is not a manual for visual journalism students, as the main goal was to depict how 'things' are and what they mean, rather than to provide vocational instructions. The methodological steps that I used and suggested in this dissertation prepare the foundation for obtaining a general picture of the visual transmediation phenomenon from print newspapers to news websites while maintaining the space to enter this field from other perspectives.

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Yiyun writing in Helsinki,
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总结（中文简介）

论文题目：

为视觉新闻记者发声——从新媒体的信息结构看视觉传播设计的专业化

总结：

电子阅读方式的普及正在挑战着传统报业和新闻行业。这种变化不仅起于科技的飞速发展，同时也影响着人们的阅读习惯和阅读体验。由此，纸质媒体的销售受到影响，新闻的传播方式得到改变，媒体记者的工作也受到很大程度的挑战。本文试图通过聚焦视觉传播设计在新闻网站中的应用，窥视视觉信息结构的变化，探究视觉新闻从业者的专业性。

芬兰在欧洲范围内是较早适应新媒体到来的国家，特别是在英特网的普及和线上报纸的使用上。然而，至今新媒体的发展是否为芬兰的新闻业带来了更大的效益呢？本文以人种志研究方法为主，实地调查了芬兰的两大报社——赫尔辛基报和拉普兰人报，对新闻生产团队的工作进行了深入的分析和研究。从视觉记者的角度，新媒介的到来以多种形式丰富和发展了新闻生产团队的工作，这也为打造一个更行之有效的读者体验提供了理论基础。本文以人种志研究方法为基础，实地调研解决四个主要的研究问题，而这四个问题将从四个方面探讨研究的核心问题，即在媒介融合的大环境下视觉新闻从业者的专业化是如何体现的。

- 1) 对报社中的视觉记者来说，新闻网站中有哪些最主要的设计原则？这些原则在传统报业逐步倾向在线阅读的时候如何运用？
- 2) 在报社逐渐倾向新闻网站的过程中，如何定义视觉记者这一角色？
- 3) 在新闻网站的视觉信息中，视觉记者如何行之有效地融美学认知于实践中，以便更好地传达新闻故事？
- 4) 在报社逐渐倾向新闻网站的过程中，报社中的视觉记者是如何看待这种转变的？报社文化是否对他们的日常工作产生影响？

本文的第二章从视觉记者的专业角度分析了媒介融合（media convergence）对于新闻机构、新闻工作者和新闻制度方面的影响。第三章从实用性出发，总结归纳了视觉记者在构架视觉新闻时的视觉语言，包括颜色、形态等基本概念，经典视觉理论以及越来越普遍的交互式视觉信息图形。

接着，从上述四个研究问题入手，本文以（预）发表的形式撰写了四篇论文。第四章从新闻网站的视觉特征着手，通过比较，归纳总结了新媒体的发展给新闻网站带来的一些创新。具体表现在，新闻网站的图文关系变得更为紧密、有效；在线新闻的时效性更为突显；网站版面的连贯性、重要性和一致性得到加强。然而科技的发展并不是阅读体验得到大幅度提升的唯一理由，视觉记者的适时而动更是丰富了读者的阅读形式。

新媒体的发展不仅体现在视觉感官上的变化，还直接对创意工作者提出了更严苛的要求。对传统报业而言，科技的发展给媒体工作者带来的是思维方式和工作方法的变革。新闻的时效性要求记者们严格按照一定的编辑方式高效运作，以期在最短的时间里报道最新鲜的消息。在这个过程中，视觉记者的创意工作从一定程度上被削减。本文从视觉记者的角度出发，观察他们的工作流程、工作内容、报社文化

等，探究新闻网站生产团队的动态给视觉信息带来的变革。第五章分析了从事视觉新闻的新闻工作者的观念变化；第六章研究了如何从美学角度理解视觉信息；第七章则探究了在纸质报纸向新闻网站发展的过程中，新闻工作者（视觉记者和文字记者）的交流问题。即使媒介融合“席卷”了全世界的许多新闻机构，视觉设计的研究都应该基于丰富的理论基础和实践的可能性，而不应该疲于应付媒介的发展、科技的进步或是工作的压力。