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Privacy and Security in the Media — Quantitative Analysis

Authors:	Jana Schuhmacher, Simone Kimpeler, Michael Friedewald (Fraunhofer ISI)

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About the PRISMS project

The PRISMS project analyses the traditional trade-off model between privacy and security and devise a more evidence-based perspective for reconciling privacy and security, trust and concern. It examines how technologies aimed at enhancing security are subjecting citizens to an increasing amount of surveillance and, in many cases, causing infringements of privacy and fundamental rights. It conducts both a multidisciplinary inquiry into the concepts of privacy and security and their relationships and an EU-wide survey to determine whether people evaluate the introduction of security technologies in terms of a trade-off. As a result, the project determines the factors that affect public assessment of the security and privacy implications of a given security technology. The project uses these results to devise a decision support system providing users (those who deploy and operate security systems) insight into the pros and cons, constraints and limits of specific security investments compared to alternatives taking into account a wider society context.

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EXECUTIVE SUMMARY

This report provides insights into the ongoing research on the media's coverage of privacy and security issues within the first stage of the PRISMS project. The PRISMS project examines how technologies aimed at enhancing security are subjecting citizens to an increasing amount of surveillance and, in many cases, causing infringements of privacy and fundamental rights. In line with the overall project's research objectives – to explore the relationship between privacy and security and to learn if people actually evaluate the introduction of new security and security-oriented surveillance technologies in terms of a trade-off – the report starts by stating the work package's two main research objectives, namely identifying important discourse patterns (topics, actors, regions etc.) regarding privacy and security appearing in the media and analysing how the notions of "privacy" and "security" are reconstructed by the media in comparison to citizens' perceptions derived in the PRISMS survey. In this regard, the main theoretical concepts – agenda setting, priming, framing, risk communication, public opinion and news values – as well as prior research in similar areas are described briefly in the following chapter. Afterwards, details on the work package's methodology and research approach are provided: a systematic content analysis of media coverage of privacy and security issues that combines qualitative and quantitative aspects in a complex way will enable us to map the European discourse on privacy and security as the work package's final outcome. The process of content identification and sourcing is described in the following sections as well as an overview of the sample of the work package's primary countries (Germany, United Kingdom, The Netherlands). Also, it is analysed how coverage of privacy and security issues evolved during the years 2008 – 2011.
This is followed by a description of the first step within our content analysis, that is analyzing the European media landscape by performing an automatic content analysis with the use of a data mining-based text analytical tool. Based on this analysis, the key features of the empirical material in terms of a selection of the main topics and issues discussed in the respective media and countries are identified. It is found that media coverage of privacy and security is dominated by issues that deal with data and personal information throughout the sample. Besides this set of shared topics, issues of national relevance are also identified. Using the results of the series of analyses conducted, the report concludes with the identification of next steps that will determine the next phase of research.

1 INTRODUCTION

In this report, we will provide insights into our ongoing research on the media's coverage of privacy and security issues within the first stage of the PRISMS project. The PRISMS project wants to examine how technologies aimed at enhancing security are subjecting citizens to an increasing amount of surveillance and, in many cases, causing infringements of privacy and fundamental rights. By doing so, the project aims at investigating the traditional trade-off model – having more security leads to less privacy and vice versa – and providing a more evidence-based model for the complex relationship between privacy and security. This will be done by a set of various work packages, which explore privacy and security, trust and concern from different disciplinary perspectives: There is an analysis of security and privacy technologies, a policy assessment of security and privacy, a criminological analysis, a legal perspective, an analysis of existing public opinion surveys – and, as mentioned, there is also an analysis of media attention to privacy and security issues. This media perspective on privacy and security forms the research topic of work package 6 and will be described in detail in this report.

We start by giving an introduction to the structure and objectives of our work packages (chapter 2). Afterwards, we will identify important prior research as well as the central theoretical concepts that frame our own research (chapter 3). This is followed by details on our methodology and research approach (chapter 4): After laying the foundation of our methodology of choice, content analysis, we describe the process of content identification and sourcing. As a first step within our work package, we then provide insights into the process of analyzing the European media landscape by performing an automatic content analysis by using the data mining-based text analytical tool Leximancer. This tool is able to discover and extract thesaurus-based concepts from the text data, which are then coded into the text, using the thesaurus as a classifier. The results of this analysis are presented in the following chapter (chapter 5); mainly by displaying the resulting asymmetric concept co-occurrence information as conceptual maps. By doing so, we describe the key features of our empirical material, that is a selection of the main topics and issues discussed in the respective media and countries as well as an analysis of how coverage of privacy and security issues evolved during the years 2008 – 2011. The analysis conducted therefore functions as a starting point for the additional identification of the main actors and events referred to in our sample as well as further division into the most frequent genres of coverage.

2 OBJECTIVES AND STRUCTURE

In the Information Society, the public's perception of security and privacy are reflected and reinforced by the media. Their role in reconstructing images, perceptions and beliefs is crucial; media express and at the same time shape public opinion. An analysis of the European media attention to privacy and security issues therefore will not only show which topics are covered in the respective media and countries, but it will also provide useful information for interpreting the PRISMS survey results, as media content is expected to be an important part of citizens' information sources about privacy and security concepts and understanding with regard to new technologies.

As for the project as a whole, the trade-off model between privacy and security functions as a starting point for our research. Trade-off in this context implies that privacy and security are rivalling concepts and that people are expected to trade parts of their privacy for an increasing amount of security and vice versa. This model is widely used to justify the infringements to privacy that surveillance-oriented security technologies cause and is expressed by arguments like "We must be willing to give up some privacy if it makes us more secure" or "If you've got nothing to hide, you shouldn't worry about government surveillance".[1] At the same time, counter-evidence suggests that in fact there is no such thing as a trade-off, that people do not take into account the various implications, chances and risks a technology poses and making informed choices by reflecting and weighting these implications. The PRISE project[2] for example found out that people more generally seem to act according to their general attitude: While concerned citizens saw their privacy being infringed without having their security enhanced, trusting citizens saw their security being increased without having their security affected. Furthermore, assessment of security technologies is not carried out in abstract terms, but depends on the respective institutional and social context of implementation.[3]

Existing studies on the media coverage of privacy and security issues do not sufficiently take these findings into account. Although there are many studies on privacy and numerous studies on specific areas of security, in particular on the media perception of terrorism, its conditions and consequences as well as on crime and natural and major technical disasters, for the whole of Europe and even for single Member States a continuous and comparative content analysis that identifies discourse patterns and differences between different risks is not available. Our work within the PRISMS project aims at contributing to the identified gap. Furthermore, we want to explore the public discourses and the individual as well as collective perception of privacy and security as expressed in media reporting in selected EU countries. Taking into account the overall research questions of the PRISMS project – to explore the relationship between privacy and security and to learn if people actually evaluate the introduction of new security and security-oriented surveillance technologies in terms of a trade-off – we defined two main objectives for our research:

1. Identify important discourse patterns (topics, actors, regions etc.) regarding privacy and security appearing in the media.

[1] Solove, Daniel J., *Nothing to hide: The false tradeoff between privacy and security* (New Haven [Conn.]: Yale University Press, 2011), p. 1.

[2] PRISE stands for: Privacy enhancing shaping of security research and technology – A participatory approach to develop acceptable and accepted principles for European Security Industries and Policies; see http://www.prise.oeaw.ac.at/

[3] Pavone, Vincenzo and Sara Degli Esposti, "Public assessment of new surveillance-oriented security technologies: Beyond the trade-off between privacy and security," *Public Understanding of Science* 21, no. 5 (2012): pp. 556–72, http://pus.sagepub.com/content/21/5/556 (accessed December 04, 2012).

2. Analyse how the notions of "privacy" and "security" are reconstructed by the media in comparison to citizens' perceptions derived in the PRISMS survey.

In this report, we will focus on the first objective. We are approaching our research questions by conducting a systematic content analysis of selected media (press, online) in different European countries. The analysis is divided into 3 different tasks:

1. A quantitative content analysis will provide an overview of frequently covered topics in the field of privacy and security (task 6.2),
2. a qualitative analysis will conduct an in-depth analysis of discourse patterns (task 6.3),
3. which together with a media monitoring (task 6.4) and the results of the PRISMS survey aim at enlightening how media reporting is related to people's perception of privacy and security.

The list of tasks shows that we combine quantitative and qualitative approaches in a complex way to gain best results. Because we believe that every quantitative study has a large qualitative aspect[4] we see aspects of both approaches in every single task and a high amount of overlaps and interlinkages. In especial a quantitative analysis as planned in task 6.2 is not possible without a qualitative exploration of the collected material to validate our search strategy as well as our assumptions and to generate hypotheses to build our further research on. Taking into account the upcoming PRISMS survey and the need to deliver input on which topics are frequently covered by the media reporting about privacy and security issues, the explorations of the material is combined with quantitative aspects by using a data mining-based text analytical tool.[5] By this we gain a good overview of our sample and the frequently discussed topics in the analysed media. Due to technical reasons, it was only possible to run the analyses for the work package's primary countries (Germany, UK, The Netherlands) before submitting deliverable 6.1. For those countries, we will report the outcomes of this analysis in chapter 5.

[4] See also chapter 4.1.
[5] For details on the software and its usage please refer to chapter 4.3.

3 THEORETICAL FOUNDATION

Prior research has shown that generally there are strong interrelations between public discourses in media reporting and the individual as well as collective perception of the covered issues. Nevertheless, there are no content analyses available that systematically examine the relationship between privacy and security and the media's role in constructing it while applying a European perspective. In this chapter we are going to present the main theoretical concepts that frame our research as well as an overview of prior research that partly makes use of these concepts on the one hand and offers useful insights on the media's role in reporting about certain risks and the public perception of these on the other.

3.1 CENTRAL CONCEPTS

Drawing from the presented studies as well as our background in communication and media sciences, in this chapter we are going to shortly present important theoretical concepts for our work.

3.1.1 Agenda Setting

The concept of agenda setting is an important approach in media impact studies. It refers to the idea that the emphasis that the mass media place on certain topics and the importance that people attribute to these topics are correlated.[6] Therefore the concept is highly relevant to our work, as we expect to find a correlation between the media's and people's agendas. An agenda is defined as "a set of issues that are communicated in a hierarchy of importance at a point in time"[7]. There are three different types of agendas: The media agenda refers to the issues that are covered by the mass media and can be explored by systematic content analyses. The public agenda refers to the issues that the public (the audience) regards as most important and is traditionally identified via surveys and opinion polls. The policy agenda finally refers to the agenda of political actors, institutions and systems. It can be explored by measuring political outputs such as policy documents and parliamentary debates.[8] In the area of agenda setting research there are three general approaches:

- The awareness model means that audiences are expected to recognize issues via an intense media reporting.
- The salience model says that the importance that people attribute to certain topics or issues is affected by the intensity and perceived importance of media reporting on these issues.
- The priorities model expects that audiences take up the media's priority of issues or topics in exactly the same manner.[9]

Previous research showed that newspaper reporting in comparison to TV reporting has a longer effect on the public agenda.[10] While supporters of the agenda setting approach thus

[6] McCombs, Maxwell E. and Donald L. Shaw, "The agenda-setting function of mass media," *Public Opinion Quarterly* 36, no. 2 (1972): pp. 176–87.
[7] Dearing, James W. W. and Everett M. Rogers, *Agenda-Setting*, Communication Concepts (Thousand Oaks: Sage Publications, 1996), p. 2.
[8] Ibid., p. 5f.
[9] Shaw, Donald Lewis and Maxwell E. McCombs, *The emergence of American political issues: The agenda-setting function of the press* (St. Paul: West Pub. Co., 1977).

emphasize the expected power of mass media, there is also the hypothesis that it works exactly the other way round: Media content is expected to be a reflection of the public agenda, because the media align themselves with regard to the audience's interests and needs. Accordingly, the media agenda is expected to derive from the audience's agenda.[11]

Today's agenda setting research does neither assume a simple causal relationship between the audience's and the media's agenda nor that both are exactly the same.[12] To put it with Brosius: „The media's agenda influences the audience's agenda for *some* audiences and not for others, for *some* issues and not for others, at *some* times and not at others".[13]

3.1.2 Priming

The agenda setting approach does not say anything about how people perceive the issues covered in media reporting. Thus the concept of priming is often understood as an extension of agenda setting, as it describes the supposed effect that media reporting has on people's opinions regarding these issues: "By making some issues more salient in people's mind (agenda setting), mass media can also shape the considerations that people take into account when making judgments about political candidates or issues (priming)" [14]. We hope to contribute to the research on priming by showing how the media portray privacy and security issues, and thereby offering important information for interpreting the results of the PRISMS survey.

3.1.3 Framing

Frames are patterns of interpretation offered by the media. According to Entman "the concept of framing consistently offers a way to describe the power of a communicating text. Analysis of frames illuminates the precise way in which influence over a human consciousness is exerted by the transfer (or communication) of information from one location – such as a speech, utterance, news report, or novel – to that consciousness"[15]. Framing is thus based on the assumption that the way an issue is characterized in media reporting – positively, negatively or neutral – can influence people's perception regarding that particular issue.[16] The process of framing involves the selection of certain aspects of an issue that determine the media reporting. Entman says: "To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described"[17].

[10] Ibid., 89–106.
[11] Edelstein, Alex S., "Agenda-Setting - Was ist zuerst: Menschen oder Medien? Medienwissenschaftliche Variationen einer alten Fragestellung," *Media Perspektiven* 7 (1983): pp. 469–74.
[12] Burkart, Roland, *Kommunikationswissenschaft: Grundlagen und Problemfelder*, 4th ed. (Wien [u.a.]: Böhlau, 2002), p. 251.
[13] Hans-Bernd Brosius, "Agenda-Setting nach einem Vierteljahrhundert Forschung: Methodischer und theoretischer Stillstand?," *Publizistik* 39, no. 3 (1994): pp. 269–88, [p. 279]. (Author's translation.)
[14] Scheufele, D. A. and D. Tewksbury, "Framing, agenda setting, and priming: The evolution of three media effects models," *Journal of Communication* 57, no. 1 (2007): pp. 9–20, [p. 11.].
[15] Entman, Robert M., "Framing: Toward Clarification of a Fractured Paradigm," *Journal of Communication* 43, no. 4 (1993): pp. 51–58, DOI: 10.1111/j.1460-2466.1993.tb01304.x (accessed March 07, 2012), [p. 51–52].
[16] Scheufele and Tewksbury, 2007.
[17] Entman, 1993, p. 52.

Journalists use the concept of framing to reduce relatively complex issues, and to make them fit into the respective media regarding time and space constraints.[18] We therefore expect to find the concept of framing widely applied in the media reporting about privacy and security issues. In line with Matthes/Kohring[19] we define frames as patterns in the respective texts that are composed of different elements. These elements are, as Entman has already mentioned, a problem definition, a causal interpretation, a moral evaluation and a treatment recommendation. These elements will be operationalised as variables that can be coded during content analysis. The patterns will then be identified via cluster analysis: When certain elements group together in a specific way, they form a pattern that is likely to be found in several texts in the sample. These patterns will be the frames that the media offers in privacy and security reporting.

3.1.4 Risk Communication

Risk communication is an important concept for our work as it describes the public process of exchanging and negotiating different perceptions of a certain (often, but not limited to technological) risk. The process is often initiated by a conflict between two or more parties with a different stance regarding a certain issue – e.g. the operating company of a nuclear power station vs. residents – and is mainly communicated by the media. Risk communication acts on the assumption that the conventional concept of risk, which is based on the product of probability and extent of damage is not applicable to the risk of modern technologies. The dangers those technologies imply are only perceived as hypothetical, as neither the possible extent of damage nor the probability of the occurrence of an accident may be foreseen in an exact sense in advance.[20]

3.1.5 Public Opinion

Although excessive research on public opinion has taken place, there is no common and thoroughly accepted definition of the concept. Public opinion does neither just derive from aggregated individual opinions, nor is it the same as the published opinion. Instead public opinion can be seen as a collective product of communications that are perceived as the prevailing opinion between the actors or speakers involved. Accordingly, an opinion only becomes the public opinion if it has an impact as prevailing opinion on the evaluation that important actors, groups or institutions have regarding social or national issues and if these opinions are picked up by the mass media. This implies that everything that is not published by the media has no significant chance to impact public opinion.[21]

3.1.6 News values

Research about news values examines which criteria apart from extrinsic factors like time and budget constraints journalists follow in their decision to report about a certain issue and to not

[18] Scheufele and Tewksbury, 2007.
[19] Matthes, Jörg and Matthias Kohring, "The Content Analysis of Media Frames: Toward Improving Reliability and Validity," *Journal of Communication* 58, no. 2 (2008): pp. 258–79.
[20] Bechmann, Gotthard and Nico Stehr, "Risikokommunikation und die Risiken der Kommunikation wissenschaftlichen Wissens: Zum gesellschaftlichen Umgang mit Nichtwissen," *GAIA - Ecological Perspectives for Science and Society* 9, no. 2 (2000): pp. 113–21, http://www.ingentaconnect.com/content/oekom/gaia/2000/00000009/00000002/art00009 (accessed March 15, 2013).
[21] Neidhardt, Friedhelm, *Öffentlichkeit, öffentliche Meinung, soziale Bewegungen* (Opladen: Westdt. Verl., 1994).

report about certain others. The underlying idea thus emphasizes that some issues, news and events are more newsworthy than others. Research in this area revealed certain criteria that are supposed to influence a journalist's choice about what to publish. These criteria include timeliness, frequency, negativity, personalisation, reference to elite nations and persons, popularity, geographical proximity and many more[22]. There is no general agreement that these criteria are inherent in the events or issues they represent, or if they are attributed by journalists. However the concept of news values states that the more of these criteria apply to an issue, the higher is its news value and thus the probability that it will be chosen for publication. Following this rule, the construction of a specific media reality that is only able to show certain parts of reality becomes obvious.[23]

3.2 LITERATURE REVIEW

As prior research relevant to our work is extensive, the following overview does not claim to be exhaustive. We will focus mainly on studies that deal with specific areas of security perception, as these make use of and develop important theoretical findings for our work.

In her study on agenda setting and risk communication Bakir[24] examines policy-oriented risk communication in the battle between Greenpeace and Shell. By analysing related press releases, television evening news, selected newspapers and scientific journals, the study seeks answers to the question how risks and threats are defined and presented by the UK media. The main findings include that media exposure impacts policy both by shaping public perception of risk (rather than of policy) and by shaping policy maker's perception of public opinion as well as that trust shapes public risk perceptions and generates public reaction to signals from cooperative action to political activism to reduce risk.

An analysis of the media's presentation of risk with regards to nuclear power and climate change by Doyle[25] found that because news media provide an important platform for public debates, the way in which new nuclear power is discursively framed in relation to climate change has consequences for its public acceptance and also for the public perception of climate change mitigation. In detail, it showed that the official governmental discourse on nuclear power is essential to climate change mitigation and that the security of future energy supplies was variously reproduced and contested across the analysed UK newspapers. Furthermore, the rebranding of nuclear power as less risky than climate change by the UK government was found to provide the discursive context through which policy decisions on new nuclear have been largely accepted by the UK news media.

[22] See for example Galtung, J. and M. H. Ruge, "The Structure of Foreign News: The Presentation of the Congo, Cuba and Cyprus Crises in Four Norwegian Newspapers," *Journal of Peace Research* 2, no. 1 (1965): pp. 64–90.; Schulz, Winfried, *Die Konstruktion von Realität in den Nachrichtenmedien: Eine Analyse der aktuellen Berichterstattung*, 1st ed. (Freiburg [Breisgau], München: Alber, 1976); Staab, Joachim Friedrich, *Nachrichtenwert-Theorie: Formale Struktur und empirischer Gehalt* (Freiburg: K. Alber, 1990f).

[23] Ibid.

[24] Bakir, Vian, "Policy Agenda Setting: Greenpeace, Shell, and Issues of Trust," *The Harvard International Journal of Press/Politics* 11, no. 3 (2006): pp. 67–88, http://hij.sagepub.com/content/11/3/67 (accessed December 04, 2012).

[25] Doyle, Julie, "Acclimatizing nuclear? Climate change, nuclear power and the reframing of risk in the UK news media," *International Communivation Gazette* 73, 1-2 (2011): pp. 107–25, http://gaz.sagepub.com/content/73/1-2/107 (accessed December 04, 2012).

Doulton and Brown[26] examine the construction of climate change in UK quality newspapers and draw from the hypotheses that the mass media are a critical arena for the climate change debate and an important source of information on climate change for the public. Having found a general rise in coverage of climate change and development, the authors state that this reflects an increasing sense of impending catastrophe regarding the impacts that climate change will have on development while at the same time the discussion in the media does not portray the uncertainty inherent in many aspects of the complex process of climate change.

In a collaborative UK research project which aimed to show how security challenges are constituted in intersecting relationships between political, military and news media actors, Gillespie[27] finds that there are ritualised interactions between policymakers, journalists and audiences. Drawing from the hypothesis that news on security have a high salience for racialised minorities because it implicates them as threats to security, with regards to the study's focus on ethnic minority groups it is stated that these interactions form sort of a "battlespace" of mutual disrespect and suspicion, which eventually intensifies the marginalization and racialization of many ethnic minority groups, in particular British Muslims.

The mass media coverage of the Columbine shootings forms the focus of a study by Altheide.[28] By analysing selected newspapers and TV news, Altheide hypothesises that the Columbine shooting was merged with terrorism as part of the broader frame of fear and national security. He states that news are the most powerful resource for public definitions in our age, and that the combination of entertaining news formats with news sources has forged a "fear-generating machine"[29], in which elements of Columbine were combined with terrorism as part of a control narrative. In general his analysis showed the process of embedding a tragic event into a broader discourse such as terrorism, which in this case contributed to an increase in fear, security measures, and surveillance as well as legitimating the war on terror, and expanding social control in the U.S.

The active involvement of journalist in constructing media frames is examined in a study by Wade.[30] Using female genital cutting (FGC) as an example for an issue over which there is a high consensus in the U.S., she examines journalist practices and media involvement in the public discourse about FGC. By conducting an analysis of newspaper coverage on the issue and additional interviews as well as analysis of primary documents the study shows that in cases of a widespread consensus reporters actively construct frames that depoliticize advocacy. By collaborating with advocates and harmonizing with opinion writers, journalists actively contribute to the further building of a consensus, which is often used to put pressure on the state. Wade shows that especially when an issue is supposedly new to the audience, journalists have significant freedom to construct an issue as they like.

[26] Doulton, Hugh and Katrina Brown, "Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press," *Global Environmental Change* 19, no. 2 (2009): pp. 191–202, http://sciencepolicy.colorado.edu/students/envs_4800/doulton_2008.pdf (accessed December 04, 2012).
[27] Gillespie, Marie, "Security, media and multicultural citizenship: A collaborative ethnography," *European Journal of Cultural Studies* 10, no. 3 (2007): pp. 275–93, http://ecs.sagepub.com/content/10/3/275 (accessed December 04, 2012).
[28] Altheide, David L., "The Columbine Shootings and the Discourse of Fear," *American Behavioral Scientist* 52, no. 10 (2009a): pp. 1354–70, http://abs.sagepub.com/content/52/10/1354 (accessed December 04, 2012).
[29] Ibid., p. 1356.
[30] Wade, Lisa, "Journalism, Advocacy, and the Social Construction of Consensus," *Media Culture & Society* 33, no. 8 (2011): pp. 1166–84, http://mcs.sagepub.com/content/33/8/1166 (accessed December 04, 2012).

The perception of risks at its relation to the cultural background is discussed in a study by Keller.[31] By reviewing prior research and studies in the field of risk perception, she examines whether differences in risk perception of health hazards among the language regions in Switzerland do exist and if those differences derive from the different cultures. It is found that while in contemporary society risk is omnipresent, experts and laypersons use different definitions of risk on which they base their judgements. Thus, even within one country – not to speak of the whole of Europe – one cannot define something as a "general public", as it is not a homogeneous group.

[31] Keller, Simone, "Adaptivity in Risk Communication: Exploring Differences in Risk Perception using the Cultural Cognition Approach," *Studies in Communication Sciences* 11, no. 1 (2011): pp. 85–103.

4 RESEARCH APPROACH

The methodology we chose to investigate media reporting is to conduct a systematic content analysis. According to Krippendorff , "content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use."[32] Content analysis is a methodology that can be applied to a huge amount of texts by dividing them into the key features of interest that are operationalised as variables and coded during the coding process. The following sections will provide an overview of the development and methodology of content analysis, its main ideas and areas of applications, before describing the concrete process of content selection, sourcing and processing within our work package.

4.1 CONTENT ANALYSIS

Content analysis has a long tradition and can be traced back to the 17th century. Not surprisingly the term itself appeared in the English language for the first time in 1941, as the mass production of newspapers was increasing since the beginning of the 20th century. Especially in the United States, the rise of the news industry was followed by an extreme interest in public opinion, and demands for ethical standards in journalism as well as empirical inquiries into the processes behind news production were emerging. These newly defined needs together with what Krippendorff calls "a somewhat simplistic notion of scientific objectivity"[33] were met by a new methodology named quantitative newspaper analysis. The rise of the methodology was quick, supported by the belief that everything that was able to be quantified was a true fact and therefore considered irrefutable. This early phase was followed by a more critical view. The experiences gained through a wide use of survey research and opinion polls in sociology nourished skepticism concerning the by then limited to subjects type of analysis. It became clear that not only the "what", but also the "how" in terms of how a certain issue are presented was important to analyse. The concept of social stereotypes[34] emerged during this time as well as the concept of attitude. Especially the latter helped to define journalistic standards of fairness and balance, as the measurement of expressed attitudes revealed the use of "favourable" and "unfavourable" expressions in the news. These developments set the pace for the shift from quantitative newspaper analysis to a broader applicable content analysis that is interested in stereotypes, styles, symbols and values and can not only be applied to other media than newspapers – radio, television, and today's online media – but that was also expanded to other fields of interest such as the examination of trends in research, the strategies of advertising or the use of language in 17th century literature, just to name a few.

Especially the analysis of propaganda during World War II led to several theoretical foundations. Among them is the finding that the context of the people who are supposed to read the analysed texts is important, that people differ in the way they read texts. This implies that the intensions of the content producers do not necessarily equal with what the reader of a text sees within a message, and how he or she interprets it. The individual's concrete context

[32] Krippendorff, Klaus, *Content analysis: An introduction to its methodology*, 3rd ed. (Los Angeles, London: SAGE, 2013), p. 24.
[33] Ibid., p. 12.
[34] Walter Lippmann, *Public Opinion* (Harcourt, Brace, 1922).

of life, its needs and expectations as well as the preferred discourses and social situation were from then on seen as important influential factors.[35]

In contrast to the still quantitative emphasis of the 1950s content analyses and their sometimes seen as shallow results, several research approaches emerged that called themselves explicitly qualitative. Although there are a variety of approaches such as (critical) discourse analysis[36], social constructivist analysis[37], rhetorical analysis[38], ethnographic content analysis[39] and conversation analysis[40], the approaches share some characteristics. Sometimes referred to as interpretive, all of them require a close and detailed reading and involve the rearticulation into new narratives and thereby interpretation of the analysed texts in regards to critical, deconstructive, emancipatory and other scholarly traditions. Given the fact that unlimited resources in scientific research are the absolute exception, it becomes obvious that only a relatively small sample can be analysed qualitatively in the above described sense.[41]

In line with Krippendorff, Früh and Mayring, we do not regard the harsh distinction between the two as helpful for our research. Every quantitative analysis includes several qualitative steps, such as exploring and reading (parts of) the material, the development of the coding guidelines and finally the interpretation of the results – not to speak of the fact that every research question derives from, if one wishes to use the terminology further on, observations and problems that are regarded as qualitative. In addition, content analysis is never only about quantities as a statement of fact, but about what these quantities mean in a broader sense. Also the other way round most so-called qualitative analyses base their results on some quantification of the analysed cases, such as the frequency and intensity of a specific issue mentioned in a single or more texts or interviews.[42] Nevertheless there are obviously more quantitative and more qualitative aspects of research, which can be fruitfully combined in different phases of the research process. In this regard we will follow Weber, who sees the combination of both quantitative and qualitative approaches as the best way to design content analyses in a meaningful way. [43]

"Meaningful" in this regard means being able to draw inferences from the analysed texts to a specific context. Inferences are conclusions that the researcher draws from the analysed texts to a context. This context has to be chosen by the researcher and may include, among others, the speaker / producer of the analysed texts, the reader who is supposed to read those texts, and the historical, political or social situation.[44]

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[35] Krippendorff, 2013, pp. 10–17.
[36] van Dijk, T. A., "Principles of Critical Discourse Analysis," *Discourse & Society* 4, no. 2 (1993): pp. 249–83.
[37] Gergen, Kenneth J., "Social constructionist inquiry: Context and implications," in *The social construction of the person*, eds. Kenneth J. Gergen and Keith E. Davis (New York: Springer-Verlag, 1985).
[38] Harris, Karen L., "Content analysis in negotiation research: A review and guide," *Behavior Research Methods, Instruments, & Computers* 28, no. 3 (1996): pp. 458–67.
[39] Altheide, David L., "Reflections: Ethnographic content analysis," *Qualitative Sociology* 10, no. 1 (1987): pp. 65–77.
[40] Sacks, Harvey, "An analysis of the course of a joke's telling in conversation," in *Explorations in the ethnography of speaking*, eds. Richard Bauman and Joel Sherzer (London, New York: Cambridge University Press, 1974).
[41] Krippendorff, 2013, pp. 22–23.
[42] Ibid.; Früh, Werner, *Inhaltsanalyse: Theorie und Praxis*, 6., überarbeitete Auflage (Konstanz: UVK-Verl.-Ges, 2007); Mayring, Philipp, *Qualitative Inhaltsanalyse: Grundlagen und Techniken*, 11., aktualisierte u. überarbeitete (Weinheim: Beltz, 2010).
[43] Weber, Robert Philip, *Basic content analysis*, 2nd ed. (Newbury Park, Calif: Sage Publications, 1990).
[44] Rössler, Patrick, *Inhaltsanalyse*, 2., überarbeitete Auflage (Stuttgart: UVK-Verl.-Ges., 2010), pp. 31-36, 237-240.

Other important factors that determine a content analysis' outcome are reliability and validity. Reliability refers to the requirement that if the analysis was carried out at another time and/or by other people, the results should still be the same. Krippendorff says "[...] a research procedure is reliable when it responds to the same phenomena in the same way regardless of the circumstances of its implementation. This is the measurement theory conception of reliability."[45] Accordingly, replicability is an important part of reliability, as it measures the degree to which a process can be reproduced by different researchers, under different conditions, at varying locations or using formally different but functionally equivalent measuring instruments. Stability on the other hand describes the degree to which a coding procedure delivers the same results when it is repeated at another time. Accuracy as the third component of reliability finally refers to the degree to which a process conforms to its specifications and delivers what it was designed for. For content analyses, reliability tests demonstrate the trustworthiness of the researchers' data.[46] In contrast to reliability, which is only concerned with procedures and standards within the research process, the amount of validity describes if a measuring instrument measures what it is supposed to measure as designed by the researcher. A content analysis is thus valid if "the inferences drawn from the available texts withstand the test of independently available evidence, of new observations, of competing theories or interpretations, or of being able to inform successful actions."[47]

4.2 CONTENT IDENTIFICATION

As part of a European project, we are interested in the media reporting about privacy and security in the whole of Europe. Since it is not possible to analyse the media coverage in all 27 EU Member States, we selected three "primary" and three "secondary" countries for our analysis that are likely to represent or at least cover different parts of Europe. The primary countries are analysed in more depth, whereas the analysis for the secondary countries is carried out somewhat lighter. To cover different European regions – Northern, Western, Southern and Eastern Europe as well as Scandinavia – we chose to analyse Germany, UK and the Netherlands as primary countries and Italy, Hungary and Denmark as secondary countries. Within those countries we looked for two main national, daily, quality newspapers and one tabloid/popular newspaper. We base our choice to analyse printed press (and not broadcast media) on findings that the usage of newspapers mainly derives from the wish to find relevant information, and on the assumption that their effect in terms of remembering what was read is higher in comparison to broadcast media, as a more active examination of the material is needed.[48] In addition, although a wide variety of alternatives to the traditional news mediaexists (e.g. Blogs), mass media still have an important societal relevance by enabling public communication. The increasing amount of ever more news providers and platforms that focus on a special topic at the same time increase the perceived importance of traditional mass media, as they only present a selection of topics and thus provide a focussed view on issues that are deemed relevant. [49] Thereby they offer orientation especially when it comes to complex topics. As we assume that citizens have a high need of useful information on privacy

[45] Krippendorff, 2013, p. 267.
[46] Ibid., pp. 267–75.
[47] Ibid., p. 329.
[48] Linzmaier, Vera, *Lebensmittelskandale in den Medien: Risikoprofile und Verbraucherverunsicherung* (München: Reinhard Fischer, 2007), p. 117.
[49] Jarren, Ottfried, "Massenmedien als Intermediäre: Zur anhaltenden Relevanz der Massenmedien für die öffentliche Kommunikation," *M&K* 3-4 (2008): pp. 329–46, http://www.m-und-k.nomos.de/fileadmin/muk/doc/Aufsatz_Muk_08_3-4.pdf (accessed March 15, 2013).

and security issues and at the same time look for orientation, we regard newspapers as the most important media for our analysis. Furthermore, newspaper articles are relatively well archived, so that the availability and accessibility is much higher. This is especially important regarding the above expressed claim that content analyses have to be replicable.

Nevertheless, one cannot deny that the importance of online media is increasing, so we are also analysing one news website per country (primary countries only).

Criteria for our choice of newspapers were national availability, circulation and political orientation; which means that we tried to find the two most important newspapers with different political stance. National quality newspapers often function as (opinion) leading media, which are not only influential to political elites and thereby have an high impact on what gets into the political and public agenda, but that are also are widely read by other journalists and thus published by other media.[50] Thus, we assume that the reported issues in our sample are far more widely distributed than only in the media we analyse and thus read by more people.

To find relevant online news websites we additionally considered access rates per day and availability. As proposed the media analysis will cover samples from the years 2008-2011. The material for the analysis was extracted using a keyword search from specialised full-text databases, mostly from LexisNexis. Nevertheless we had to change that pattern to some extent for some of the countries:

- Germany:
  The German tabloid BILD revealed too less articles using our keyword-based search and thus had to be excluded from this part of the analysis.
- UK:
  Though The Sun has the highest circulation of the British tabloids, its covered topics and overall concept makes it less relevant for our analysis than the mid-range Daily Mail.
- The Netherlands:
  We chose to investigate the popular conservative newspaper AD instead of the christian-conservative newspaper Trouw, because AD's circulation is much higher and therefore its influence is deemed more important.
  As the most accessed Dutch news website nu.nl does not offer the possibility of a structured search function as we need it, we chose to investigate nos.nl.
- Italy:
  The Italian media landscape offers widely read specialized sports newspapers, but no national tabloids.
- Hungary:
  The Hungarian tabloid Blikk is not available in any database earlier than 1st of June, 2009.

With regard to the overall PRISMS objective – to better understand the relationship between privacy and security and to research whether citizens actually evaluate the introduction of security technologies in terms of a trade-off – on the one hand and to the theoretical and methodological concept of media analysis on the other – as shown in chapter 4.1, content

[50] Gerhards, Jürgen and Mike Steffen Schäfer, *Die Herstellung einer öffentlichen Hegemonie: Humangenomforschung in der deutschen und der US-amerikanischen Presse*, 1st ed. (Wiesbaden: VS Verlag für Sozialwissenschaften, 2006), p. 74; Neidhardt, 1994.

analysis is concerned with texts that are meaningful in relation to a chosen context – we extracted our sample by combining the project's key terms privacy and security in the various languages. This means that both terms have to be mentioned in a published article to be included in our sample, which is expected to deliver a high relevance concerning our research objectives. As we were able to extract most of our sample from full-text databases that also apply the search terms to their self-defined categories, it is inevitable that the sample also partly consists of articles that may not literally contain the words privacy and security, but that have been tagged as e.g. belonging to the category "Informational security and privacy". However, this is not the case for the British and Dutch news websites, as these websites do not offer a sophisticated search function and do not apply tags as the database providers do. Furthermore, these websites do not allow a truncated search, which is reflected by the lesser amount of articles found in comparison to the respective newspapers per country.

The comparative approach of our analysis is challenging is several ways. Firstly, the question arises of how to deal with the six different languages in practice. Existing research often only states that content in different languages was analysed and that it was a huge challenge, but not how the various arising problems were solved.[51]Lauf/Peter present different ways how to approach a multilingual comparative content analysis, from which we chose the approach to code in the project language (English).[52] This means that the instructions and the codebook and codesheet are written in English and all the training as well as the coding itself is conducted in English. Coders code texts that are their mother tongue or where they have at least sufficient (C2 level) language skills.

Secondly, it is extremely difficult to keep the analyses of texts from different countries and in different languages comparable. Following Altmeppen, we tried to achieve equivalence concerning the underlying concepts, the overall research strategy and the gained sample by taking into account the different uses of the terms privacy and security in the different languages.[53] Concerning the sample we tried to follow the same pattern for every country, that is to chose the two most important national daily quality newspapers – that is the ones with the highest circulation – with respective different political alignments and a national tabloid, plus the most important news website (regarding access rate per day) for the primary countries. We already listed deviations from this pattern in the previous sections. Since it is almost impossible to ensure exact comparability, the following table aims at providing insights into the process of content identification. It provides an overview of our sample by listing the respective database used, the search terms for extracting the articles as well as the number of articles found. To get a first impression of the respective country's and media's sample size, the total number of words and the number of words used (dictionary) is also shown. For detailed information on characteristics of the selected media please refer to the appendix.

[51] E.g. Buckman, R. T., "How Eight Weekly Newsmagazines Covered Elections in Six Countries," *Journalism & Mass Communication Quarterly* 70, no. 4 (1993): pp. 780–92.; Leroy, P. and K. Siune, "The Role of Television in European Elections: The Cases of Belgium and Denmark," *European Journal of Communication* 9, no. 1 (1994): pp. 47–69.

[52] Lauf, Edmund and Jochen Peter, "Die Codierung verschiedensprachiger Inhalte. Ergebungskonzepte und Gütemaße," in *Inhaltsanalyse: Perspektiven, Probleme, Potentiale*, eds. Werner Wirth and Edmund Lauf (Köln: Halem, 2001), pp. 200–205.

[53] Altmeppen, Klaus-Dieter and Thomas Hanitzsch, "Über das Vergleichen. Komparative Forschung in deutschen kommunikationswissenschaftlichen Fachzeitschriften 1948-2005," *Medien und Kommunikationswissenschaft* 55, no. 2 (2007): pp. 185–203, http://www.m-und-k.nomos.de/fileadmin/muk/doc/MuK_07_02.pdf.

Germany		Frankfurter Allgemeine Zeitung (FAZ)	Süddeutsche Zeitung (SZ)	BILD	Spiegel Online
	Database used	Genios	LexisNexis	AS infopool	LexisNexis
	Search terms	(privatsphäre* OR privatheit*) AND *sicherheit*	privatsphäre! OR privatheit! AND !sicherheit!	privatsphäre* OR privatheit* AND sicherheit*	privatsphäre! OR privatheit! AND !sicherheit!
	No. of articles	181	235	9	217
	No. of words (total)	181.929	193.887	6.557	176.189
	No. of different words used (thesaurus/dictionary)	29.397	27.273	1.978	27.843
UK		The Guardian	The Daily Telegraph	Daily Mail	BBC News
	Database used	LexisNexis	LexisNexis	LexisNexis	http://www.bbc.co.uk/news/
	Search terms	privac! AND securit!	privac! AND securit!	privac! AND securit!	privacy AND security
	No. of articles	614	494	494	116
	No. of words (total)	525.715	318.276	459.217	85.089
	No. of different words used (thesaurus/dictionary)	29.487	23.460	27.021	8.893
The Netherlands		AD (Algemeen Dagblad)	De Volkskrant	De Telegraaf	nos.nl
	Database used	LexisNexis	LexisNexis	LexisNexis	http://nos.nl/
	Search terms	(privacy! OR persoonlijke! levenssfeer!) AND veiligheid!	(privacy! OR persoonlijke! levenssfeer!) AND veiligheid!	(privacy! OR persoonlijke! levenssfeer!) AND veiligheid!	privacy* AND veiligheid
	No. of articles	112	175	166	52
	No. of words (total)	61.574	146.579	94.818	15.286
	No. of different words used (thesaurus/dictionary)	10.530	18.164	13.241	3.371

Table 1: Sample overview (primary countries only)

4.3 CONTENT PROCESSING

As already mentioned, we decided to use a text analytics tool to explore our sample. Using computers as an aid in content analysis has a long tradition and dates back to the 1950s, when computer languages suitable for processing literal data emerged. As (quantitative) content analyses typically deal with huge amounts of text, the use of computers that not only function as a tool to archive and organize the research material, but that also support or automatically execute the coding process only seems natural. Today the development of text analysis software mainly derives from the large volumes of electronically or "born digitally" available texts.

The big advantage of processing data is of course that computers work perfectly reliable, as they repeat the same procedure according to the underlying algorithm over and over and that they are not subject to researcher bias. A great disadvantage however is that they do not understand the various meanings of a word or phrase or whole text, as they only count

frequencies and do not automatically detect homonyms, synonyms and word stems. Besides the overall effort of developing better algorithms for content analysis software, a variety of approaches emerged to overcome this main disadvantage. Computer-assisted content analysis typically works by a dictionary, which is build by the researcher and in its function is comparable to the codebook in manual content analysis. As the software is only able to find what is defined in this dictionary, it has to include all the words that represent the defined categories. Accordingly, the development of a dictionary that is able to deliver results that are comparable to manual coding is a huge amount of work, whereas once the dictionary is created, the coding itself is done within seconds. [54] Still, as we are dealing with six different languages, this approach does not seem to be suitable for our analysis. Following previous research we instead settled for a tool apart from the dictionary-based approaches to conduct a co-occurrence analysis.[55] A co-occurrence analysis is meant to find meaningful structures within a set of documents by measuring which words cluster together frequently. Accordingly, it is an exploratory approach of data analysis, not of data collection.

We chose the software Leximancer for our exploratory analysis for several reasons. To begin, because it has been used in several content analyses[56] and previous research has shown the reproducibility of the analyses' outcomes and the correlative and functional validity of its algorithms.[57]Also it applies an iterative learning approach to the coding of concepts and themes without the possible bias deriving from static dictionaries or thesauri. Additionally the analyses' outcomes – the core concepts and themes found in the data – are visualised in a useful and intuitively understandable manner, while still allowing the researcher to explore what lies behind each concept and theme identified. While the concepts are collections of words that travel togehter consistently throughout the texts, the themes group those concepts that occur together frequently.[58]

For our work – regarding the various discourses in the analysed countries – it appears to be especially useful because by using such a tool we are able to discover frequently occurring topics and information on how they are related independent from any assumptions of what might be frequently discussed in the first place.

Leximancer offers information on the frequency and co-occurrence of concepts by featuring an iterative learning algorithm that functions as follows. On the basis of word frequency and co-occurrence usage, a ranked list of the most important lexical terms is generated from the data. In the next step these terms are used for a bootstrapping thesaurus builder, which extends the seed word definitions in an iterative process and thereby learns a set of classifiers. In terms of content analysis, the steps in this first phase represent the learning of the categorical definitions. The results – the weighted term classifiers – are then referred to as

[54] Früh, 2077, pp. 286–93; Krippendorff, 2013, pp. 19–22; Rössler, 2010, pp. 188–91.
[55] Landmann, Juliane and Cornelia Züll, "Computergestützte Inhaltsanalyse ohne Diktionär? Ein Praxistest," *ZUMA-Nachrichten* 28, no. 54 (2004): pp. 117–40, http://nbn-resolving.de/urn:nbn:de:0168-ssoar-207687 (accessed March 15, 2013); Landmann, Juliane and Cornelia Züll, "Identifying Events Using Computer-Assisted Text Analysis," *Social Science Computer Review* 26, no. 4 (2007): pp. 483–97.
[56] E.g. Indulska, Marta, Dirk S. Hovorka, and Jan Recker, "Quantitative approaches to content analysis: identifying conceptual drift across publication outlets," *European Journal of Information Systems* 21, no. 1 (2011): pp. 49–69; Swart, K., M. Linley, and E. Hardenberg, "A media analysis of the 2010 FIFA World Cup: A case study of selected international media," *African Journal for Physical, Health Education, Recreation and Dance (*2012): 131–41, http://www.ajol.info/index.php/ajpherd/article/view/83908 (accessed February 27, 2013).
[57] Smith, Andrew E. and Michael S. Humphreys, "Evaluation of unsupervised semantic mapping of natural language with Leximancer concept mapping," *Behavior Research Methods* 38, no. 2 (2006): pp. 262–79.
[58] Indulska et al., 2011, p. 4.

concepts. These concepts are used in a next step to classify the text throughout predefined units[59], which is similar to coding the text segments in manual content analysis. The outcomes are a concept index as well as a concept co-occurrence matrix. The programme then calculates the relative frequency of co-occurrences of concepts in the texts, which is finally used to display the information in a so-called concept map. This step is comparable to the analysis of category frequency and category co-occurrence information. The concept map is finally produced via a clustering algorithm and has to be generated by running the whole process several times from scratch, until the output stays stable.[60]

We agree with Smith/Humphreys who state that although it is obvious that a method which discards word ordering within sentences prevents the researcher from obtaining much grammatical information, it still provides a variety of rich and complex data-specific information.[61]

This information is mainly presented by means of a conceptual map. It consists of the concepts, information on their frequency of occurrence and co-occurrences, and the so-called themes that represent groups (clusters) of concepts. The importance of concepts and themes is indicated by a colour code: hot colours (red, orange) denote the most relevant concepts, cool colours (blue, green) denote the least relevant. Additionally, the frequency of each concept is graphically represented by the size of each concept's label (the node). Besides the concept maps Leximancer provides a variety of other information and forms of representation. In this report we will focus on the maps and the theme connectivity lists. A series of different analyses was run to answer the following questions:

- What are the main concepts and themes in our sample?
- How are the concepts and themes composed?
- How is the relationship between the concepts and themes, how are they co-occurring?

To perform the above described analysis we carried out the following steps (adapted and extended from Indulska et al.[62]):

1. Data preparation. This step is essential to any computer-assisted approach and includes the data cleansing (eliminating any elements that might influence the outcome in a not intended way, e.g. graphics, meta data, copyright disclaimers) as well as the separation of the text files, so that every article would eventually be archived as a single text file.
2. Loading the desired set of data to analyse (e.g. one medium or all media per country and complete time period; different media to compare discourse within a specific time period).
3. Running the analysis. This step includes the editing of the respective stop word list and has to be repeated several times, while carefully inspecting the maps on each occasion until the output seems stable. On average we ran each analysis 10 times.
4. Exploring the core themes, taking into account the colour coding scheme and centrality indicated on the concept map.
5. Exploring relationships and proximity of themes.

[59] Smith and Humphreys (2006, p. 262) mention that the default size of these units is three sentences, whereas in the version we use (Leximancer 4) it is two sentences.
[60] For a detailed description of the underlying algorithms of Leximancer please refer to ibid., p. 262–65.
[61] Ibid., p. 277.
[62] Indulska et al., 2011, p. 8.

6. Drilling down to the concepts each theme consists of, exploring their respective strength indicated by the size of each concepts knot as well as their relative distance/connection to each other to understand connectivity and context of use in combination.
7. Drilling down to evidence words representing each concept to understand what lays underneath and thus the concept's context.
8. Drilling down to relevant quotes that exemplify each concept and provide insight into their grouping within the themes.

We will discuss the results in the following chapter.

5 RESULTS

This chapter will present and discuss the main outcomes of our analysis for the primary countries.

5.1 INTENSITY OF REPORTING

Before presenting the core themes and concepts found in the data, we start by having a general look at the nature of our data. First of all we were interested in how the intensity of reporting evolves over time. The following table (Table 2) shows the distribution of articles throughout the analysed years in terms of absolute numbers. For a better visualisation, the development in percentages is also shown in Figure 1 to Figure 3.

	2008	2009	2010	2011	total
Germany					
FAZ	46	35	53	47	181
	25,41%	*19,34%*	*29,28%*	*25,97%*	*100%*
SZ	59	46	76	54	235
	25,11%	*19,57%*	*32,34%*	*22,98%*	*100%*
BILD	2	0	4	3	9
	22,22%	*0,00%*	*44,44%*	*33,33%*	*100%*
Spiegel Online	51	48	64	54	217
	23,50%	*22,12%*	*29,49%*	*24,88%*	*100%*
UK					
Daily Telegraph	144	73	194	128	494
	29,15%	*14,78%*	*30,16%*	*25,91%*	*100%*
Guardian	184	162	133	135	614
	30,00%	*26,38%*	*21,66%*	*21,99%*	*100%*
Daily Mail	204	97	113	80	494
	41,30%	*19,64%*	*22,87%*	*16,19%*	*100%*
BBC News	27	31	32	18	108
	25,00%	*28,70%*	*29,63%*	*16,67%*	*100%*
The Netherlands					
De Volkskrant	46	34	44	51	175
	26,29%	*19,43%*	*25,14%*	*29,14%*	*100%*
AD	34	25	24	29	112
	30,36%	*22,32%*	*21,43%*	*25,89%*	*100%*
De Telegraaf	34	43	42	47	166
	20,48%	*25,90%*	*25,30%*	*28,31%*	*100%*
nos.nl	4	4	13	31	52
	7,69%	*7,69%*	*25,00%*	*59,62%*	*100%*

Table 2: Distribution of articles (percentage sums may not equal 100 due to rounding).

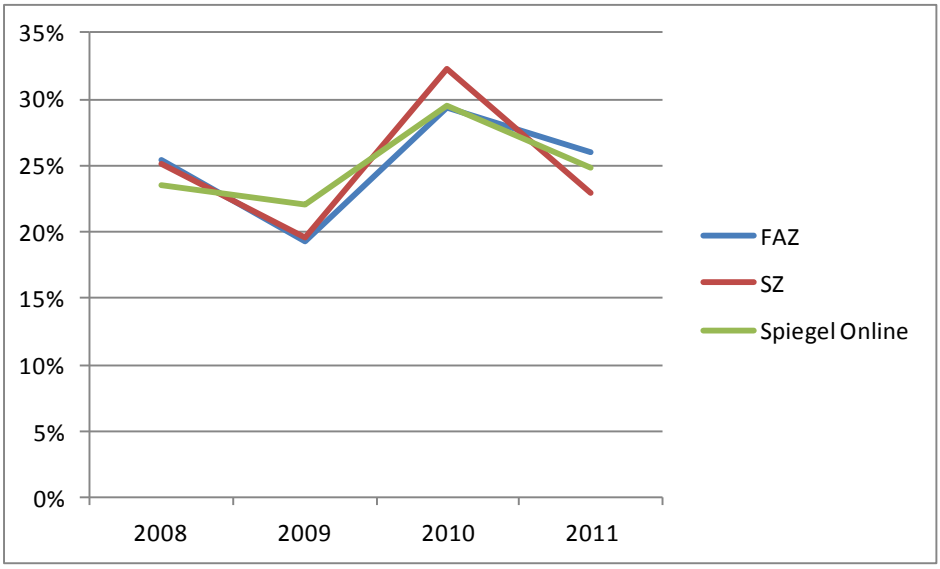

Figure 1: Distribution of articles in Germany

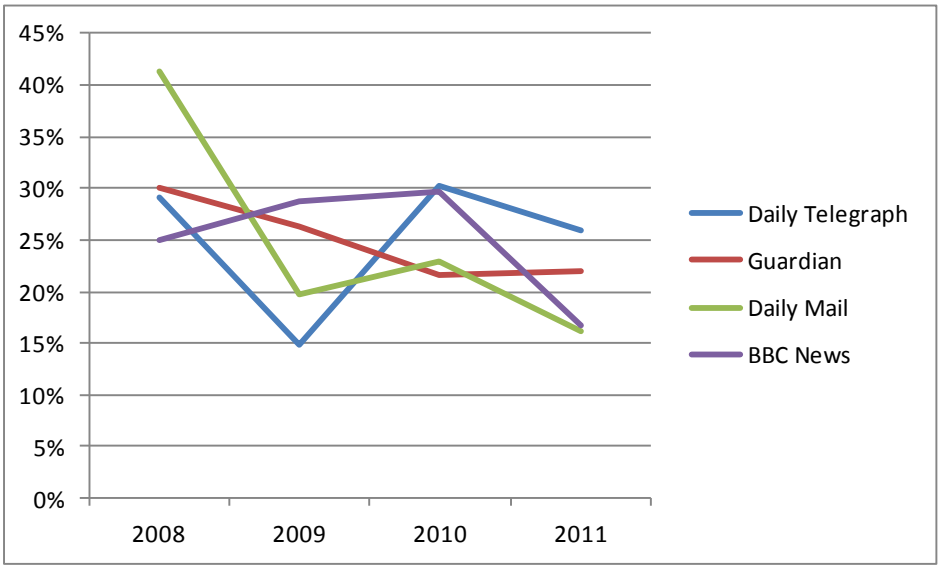

Figure 2: Distribution of articles in the UK

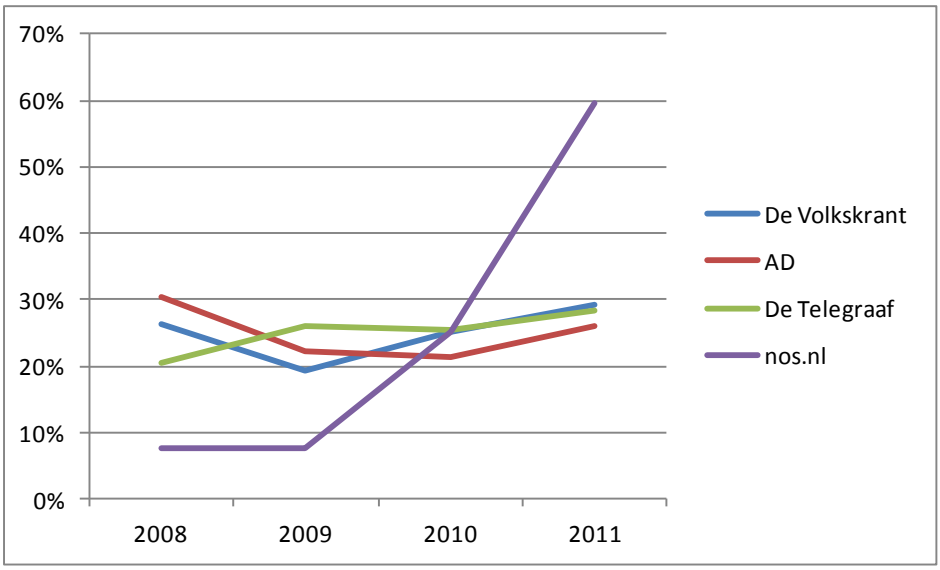

Figure 3: Distribution of articles in the Netherlands

Apart from the fact that the sample gained for the UK is significantly bigger than the German and Dutch one, there are some additional points of interest. In Germany all media analysed (again, BILD is excluded) seem to follow the same pattern of a more or less same amount of articles in the years 2008 and 2011, with a visible low point in 2009 followed by a peak in 2010. The situation in the UK and also in the Netherlands is less uniform without a clearly identifiable pattern.

It seems likely that if the intensity of reporting is as equally spread throughout the analysed media as it is in Germany, that the same issues in terms of foci of reporting can be found in the respective media. Another reason might be that there were certain events in the respective years that influenced the reporting about privacy and security in the above shown way. Looking at the situation in the Netherlands and the UK, one can reason that the different media set different foci and that certain events did not have the same overall influence as in Germany.

5.2 LEXIMANCER ANALYSIS

As a next step, we ran a series of Leximancer analyses. First of all, every medium in our sample was analysed on its own. After performing this step for the whole time period of analysis (2008-2011), we ran it for each of the years separately as well. Finally all media in our sample were taken together per country and then analysed. The outputs gained are intended to identify, further explore and discuss central themes and concepts within our data, as these concepts represent the most prominent issues in the respective data set. By analysing each medium separately, we will be able to identify the focus of discussion and see whether these differ in the different media. Looking at the years separately will indicate if the focus of discussion changed over the time period of analysis. The aggregated concept maps that are gained by analysing the whole data set for one country (containing all media) finally allow for a comparison between the countries, as they represent the media landscape and thus discourse regarding privacy and security taking place in each of the countries. For every series of analysis we also inspected the theme connectivity list, which includes details on which themes are the most relevant in the data set. This offers an indication of the scope of discussion, as a small amount of strong themes within a data set represents a discussion that is focussed on a few central topics, whereas a higher amount of strong themes shows a more diversified discussion.

Figure 4 and Figure 5 show the concept map and theme connectivity list for the German conservative quality newspaper Frankfurter Allgemeine Zeitung (FAZ), which will be used as an example to generally describe what can be drawn from it. As there is much to explore in the concepts maps, not only the themes, but also the concepts and their respective strength as well as their relation to each other, we will only describe this case in detail to give an example of what we did for each concept map. Afterwards, we will focus on some interesting aspects that were the outcome of the above described series of analyses.

Following the general process described in chapter 4.3, all articles which were extracted from the database according to our search strategy were prepared and loaded into Leximancer, as always the analysis was run several times from scratch and inspected on each occasion, until the output seemed stable.

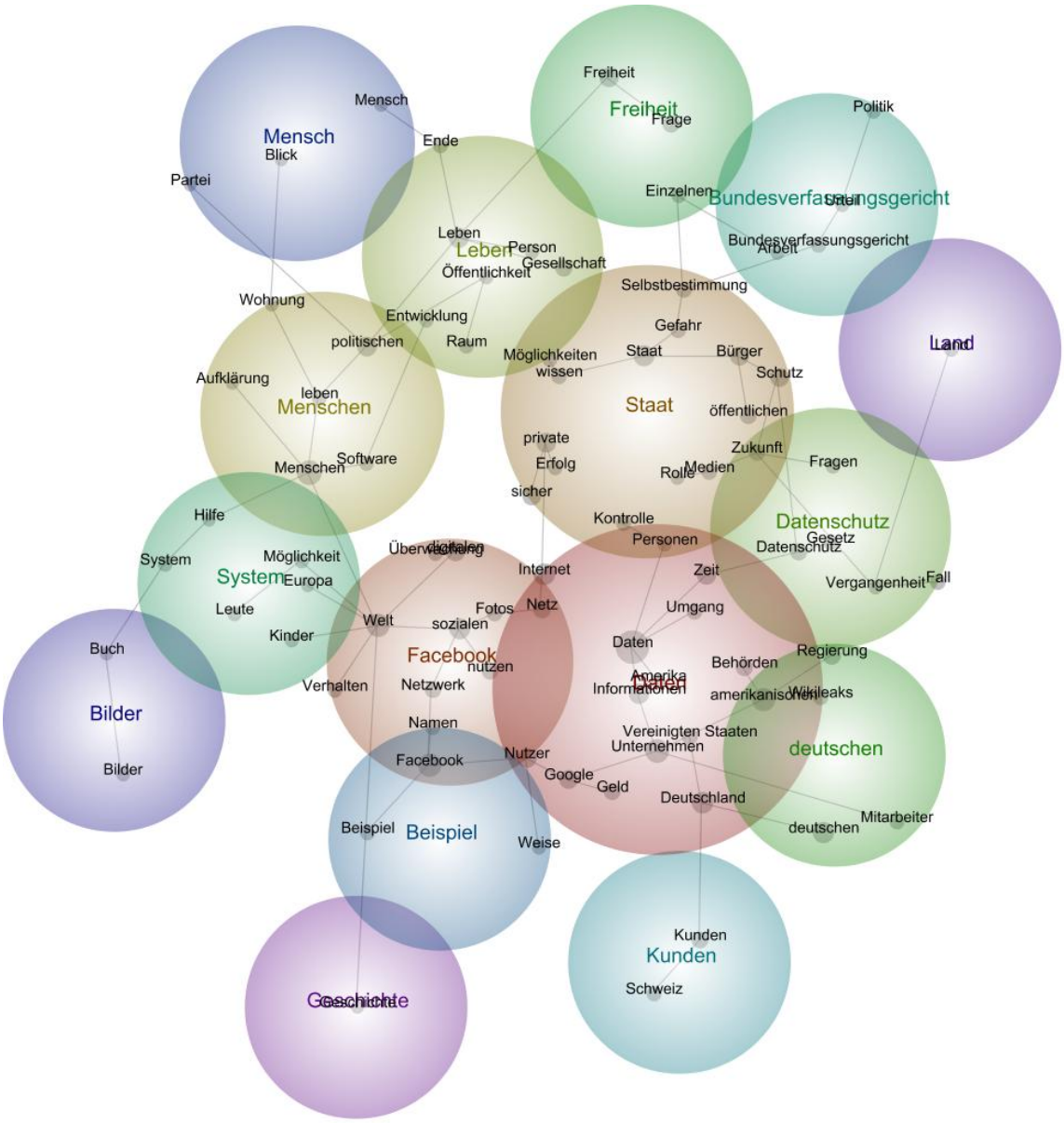

Figure 4: Concept map FAZ, 2008-2011

Figure 4 shows the concept map that was gained from the analysis. Every word mentioned represents one concept, and the coloured circles represent themes as clusters of concepts. Following the colour code – hot colours (red, orange) denote the most relevant concepts, cool colours (blue, green) denote the least relevant – we can easily see that there are three central themes in the data; namely the themes *Daten* (data), *Facebook* (facebook) and *Staat* (state). These themes consist of several frequently appearing and highly connected concepts, which is shown by the size of each concept's node and the rays between them: the shorter the ray, the stronger the connection between two concepts. It must be noted that each theme's name derives from a concept within that group, and that these labels can vary with each cycle of running the analysis.

The concept map is displayed with the maximum amount of discovered concepts, which results in various overlapping concept labels where particularly strong connections appear. In this case, the highest amount of overlapping labels is found in the dominant theme *Daten* (data). There are also overlaps within the themes, which means that some concepts belong to

two or more themes. The concepts each of the three dominant themes consists of are listed and translated below:

Theme *Daten* (data)	
Daten	data
Informationen	information
amerikanischen	american
Zeit	time
Unternehmen	company
Personen	persons
Internet	internet
Netz	web
Amerika	America
Vereinigte	United
Staaten	States
Nutzer	user
Google	google
Deutschland	Germany
Behörden	agency/ public authority
Geld	money
Wikileaks	wikileaks
Umgang	handling

Theme *Staat* (state)	
Staat	state
Bürger	citizen
Gefahr	danger/ threat/ risk
Schutz	protection
sicher	safe/secure/certain
Selbstbestimmung	self-determination
Erfolg	success
private	private
Möglichkeiten	chances/opportunities
Rolle	role
Zukunft	future
Medien	media
wissen	know
Kontrolle	control
öffentlichen	public
Personen	persons

Theme *Facebook* (facebook)	
Facebook	facebook
Netzwerk	network
sozialen	social
Fotos	pictures/images
Netz	web
nutzen	use
Überwachung	surveillance
digitalen	digital
Welt	world
Verhalten	behaviour
Namen	names

Table 3: Concepts grouped within themes *Daten* (data), *Staat* (state) and *Facebook* (facebook), FAZ

As shown, the theme *Daten* (data) refers to the concepts *Daten* (data) *Informationen* (information), *Umgang* (handling), *Internet* (internet), *Netz* (web), *amerikanischen* (american), *Unternehmen* (companies) and *Nutzer* (user), among others. Drilling down to the evidence words representing each concept and to exemplifying text quotes as well as taking into account the clustering (co-occurrence) of concepts within the theme, it becomes obvious that the theme as a whole is, exactly as the theme name suggests, concerned with data related issues. In other words: Evidence words representing the concept *Daten* (data) are frequently

co-occurring with evidence words representing each other concept within the whole data theme. The following quotes are provided to exemplify this:

Concept *Informationen* (information):
„Wir sind eben nicht mehr Herren über unsere Daten. Wir können inzwischen nicht mehr nachvollziehen, welche Daten informationstechnische Systeme erheben, wie sie funktionieren und wie wir Informationen über uns sichern oder löschen können." (FAZ, 16.11.2011)
(We do not have the authority over our data anymore. By now, we are not able to reconstruct which data is collected by informational systems, how they function and how we are able to save or delete information about ourselves.)[63]

Concept *Umgang* (handling):
„Wikileaks bemüht sich also um einen verantwortungsvollen Umgang mit den Daten. Ob das ausreicht, wird sich noch zeigen." (FAZ, 15.12.2010)
(Wikileaks seeks to deal with the data in a reliable way. Time will tell if this is sufficient.) [64]

Concept *Internet* (internet):
„Drei Viertel aller Jugendlichen sind im Internet in sozialen Netzwerken unterwegs. Offenherzig hinterlassen sie private Daten - mit unabsehbaren Folgen." (FAZ, 30.01.2009)
(Three thirds of all adolescents use social networks on the internet. Generously they leave behind personal data – with unforeseeable consequences.) [65]

Concept *Netz* (web):
„Denn der aktive Austausch von Inhalten im Netz beruht auf einer Technologie, die Fachleute als asynchrone Datenübertragung bezeichnen. Das auch als Ajax bekannte Konzept hat Schwachstellen." (FAZ, 23.08.2008)
(Because the active exchange of content in the internet is based on a technology referred to asynchronous data exchange by experts. This concept is also known as Ajax and has weaknesses.) [66]

Concept *amerikanischen* (american):
„Auf Transatlantikflügen werden solche Daten bereits seit längerem an die amerikanischen Behörden gemeldet, weil die EU ein entsprechendes Abkommen mit den Vereinigten Staaten geschlossen hat." (FAZ, 22.01.2010)
(On transatlantic flights this kind of data has long been reported to US authorities as the EU has agreed on such a treaty with the United States.) [67]

Concept *Unternehmen* (companies):
„Dieses Arkanum lässt sich im Digitalzeitalter kaum noch sichern. Der jüngste Datendiebstahl bei Sony hat gezeigt, dass Daten selbst in der Hand von Unternehmen, denen man die Kompetenz dafür zutrauen müsste, nicht mehr sicher sind." (FAZ, 26.05.2011)
(This arcanum can hardly be kept in the digital age. Recent data theft from Sony showed that even in the hand of companies that would need to be seen as qualified, data no longer are safe.) [68]

[63] Author's translation.
[64] Author's translation.
[65] Author's translation.
[66] Author's translation.
[67] Author's translation.
[68] Author's translation.

Concept Nutzer (user):
„Dass vor allem Facebook in der Kritik steht, liegt daran, dass die Nutzer dort Daten veröffentlichen, die nicht jeder lesen soll. Bei Twitter etwa geht es darum, möglichst viele Menschen zu erreichen." (FAZ 2010, 18.02.2010)
(That it is mainly Facebook that is the centre of criticism derives from the fact that users are publishing information which is not intended to be accessible to anybody. Twitter for example is about reaching as many people as possible.) [69]

In a similar way, the other themes and concepts were explored. In the FAZ's case, the two most important themes apart from *Daten* (data) refer to *Facebook* (facebook) and *Staat* (state). The facebook theme is linked to the reporting (literally and explicitly) about Facebook, but also to other social networks – mostly to the German social networks *StudiVZ* and *XING*. Accordingly we reason that social networks in general and Facebook in particular play an important role in the FAZ's reporting about privacy and security issues.
The state theme refers to the reporting about the role of the state in ensuring safety and security for its citizens, protection of individual freedom, punishment for misuse of personal data, opportunities and risks that societies face due to new surveillance-oriented security technologies and the like. Detailed lists for each data set, containing the ranked concepts and exemplifying quotes for the respective media are provided in the supplementary documentation to this report.

As already mentioned, we also took into account the theme connectivity list, which shows the rate of connectivity between the themes. In case of the FAZ (Figure 5) it is indicated that whenever evidence words related to the concepts of the theme *Facebook* (facebook) appear in the texts, there is a co-occurrence rate of 70% with evidence words related to the concepts of the theme *Daten* (data). Almost as strong, whenever evidence words related to the concepts of the theme *Staat* (state) appear in the texts, there is a co-occurrence rate of 69% with evidence words related to the concepts of the theme *Daten* (data). All other themes have a much lower rate of connectivity, which indicates that the discussion is focussed on three relatively strong and thus narrow set of themes.

Theme	Connectivity	Relevance
Daten	100%	
Facebook	70%	
Staat	69%	
Menschen	29%	
Leben	27%	
Datenschutz	22%	
deutschen	22%	
Freiheit	15%	
System	14%	
Bundesverfassungsgericht	11%	
Kunden	08%	
Beispiel	06%	
Mensch	06%	
Bilder	04%	
Land	03%	
Geschichte	02%	

Figure 5: Theme connectivity list FAZ, 2008-2011

Nevertheless, the lesser connected themes provide useful information on the nature of the discussion. On the one hand they may provide information on national relevant topics.[70] The

[69] Author's translation.
[70] The usually lesser connected themes also represent the specific nature of reporting in the respective media, that is the respective focus of discussion. As this will show more obviously when one medium is compared to the other, this will be explained in the following sections.

theme *Schweiz* (Switzerland) for example refers to the reporting about Germany's tax agreement with Switzerland, in whose context the bank costumers' privacy was discussed in relation to the right of the state to retroactively tax the unclaimed money held by German citizens in Swiss bank accounts.
The theme *Beispiel* (example) on the other hand shows that the FAZ's reporting on privacy and security issues makes frequent use of examples.

Another source of information are the rays between the concepts that indicate the relation between the two. In the FAZ's case for example *Datenschutz* (data protection) appears very near to *Gesetz* (law). Within the theme *Staat* (state) the concept *Bürger* (citizen) is surrounded by *Schutz* (protection) and *Gefahr* (danger/hazard/thread). Within the theme *Facebook* (facebook), the concept *Überwachung* (surveillance) and *digitalen* (digital) are so close that their labels overlap. These connections provide useful information on which themes might be interesting to analyse in more depth in the qualitative phase of our research.

With regard to the above stated finding that the German reporting on privacy and security issues follows a clear pattern of a more or less same amount of articles in the years 2008 and 2011, with a visible low point in 2009 followed by a peak in 2010, we looked at the most important concepts appearing in the German media in the year 2010 to learn which events might have led to an increase of coverage. In case of the FAZ, the most important concept in 2010 is *Wikileaks* (wikileaks), followed by *amerikanischen* (American) and *Google* (google) (see Figure 6).

Category: FILE_faz_2008

Concept	Rel Freq (%)	Strength (%)	Prominence
gesetz	2	50	2.6
freiheit	4	44	2.3
bürger	3	39	2.0
staat	3	29	1.5
schutz	2	24	1.3
frage	2	22	1.2
politischen	2	20	1.1
deutschen	2	20	1.0
daten	3	16	0.9
menschen	2	13	0.7

Category: FILE_faz_2009

Concept	Rel Freq (%)	Strength (%)	Prominence
öffentlichen	2	31	1.4
politischen	3	31	1.4
welt	3	30	1.4
internet	2	28	1.3
private	2	26	1.2
menschen	3	24	1.1
freiheit	2	24	1.1
unternehmen	2	23	1.1
zeit	2	23	1.1
deutschen	2	17	0.8

Category: FILE_faz_2010

Concept	Rel Freq (%)	Strength (%)	Prominence
wikileaks	3	74	2.8
amerikanischen	4	59	2.2
google	2	56	2.1
daten	6	50	1.9
facebook	3	48	1.8
nutzer	2	48	1.8
deutschen	3	36	1.4
internet	2	36	1.4
deutschland	3	36	1.4
unternehmen	2	33	1.3

Category: FILE_faz_2011

Concept	Rel Freq (%)	Strength (%)	Prominence
menschen	4	46	1.5
leben	2	45	1.4
zeit	2	40	1.3
politischen	2	38	1.2
deutschland	2	38	1.2
welt	3	37	1.2
staat	2	37	1.2
facebook	2	34	1.1
unternehmen	2	33	1.0
daten	2	22	0.7

Figure 6: Ranked concepts FAZ 2008-2011

Accordingly, we reason that in case of the FAZ, events related to *WikiLeaks* (public disagreement between founder and spokesperson Julian Assange and the German former representative Daniel Domscheit-Berg, followed by foundation of OpenLeaks by Domscheit-Berg; Cablegate, the release of about 250.000 cables to the U.S. state department containing diplomatic analysis from world leaders, and the diplomats' assessment of host countries and

their officials), *amerikanischen* (transfer of personal data to U.S. authorities, in especial the SWIFT agreement, which passed the European parliament in July 2010) and *Google* (in August 2010, Google announced that its Street View would be available in Germany within the same year, followed by the opportunity to enter an objection so that a private property would only appear blurred) led to the observed increase in coverage.

Leximancer offers a variety of even more features to help interpret the software's outcome. For reasons of brevity, we will not discuss these further on, but as announced will now focus on the identification of central concepts and themes in our sample.

5.2.1 Germany

The German reporting on privacy and security issues as represented by our sample is focussed on one core topic: *Daten* (data). As shown in the respective concept maps for each of the German media analysed (Figure 7, Figure 9 and Figure 11), this theme is the most frequently found and connected one. Details for the FAZ's case have already been provided in the previous section. In the SZ's case, the data theme consists of the concepts *Informationen* (information), *Problem* (problem), *Nutzer* (user) *Facebook* (facebook), *Google* (google), *Bürger* (citizen), *Internet* (internet), *Schutz* (protection) and *Namen* (names). The concepts *Bürger* (citizens) and *Problem* (problem) thus are more frequently co-occurring with the concept *Daten* (data) than in the FAZ. The concept *Unternehmen* (companies), which is included in the data theme in the FAZ's case, forms a separate theme in the SZ's case. The theme *Datenschutz* (data protection) forms a separate theme in both cases, but is more prominent and higher connected to the data theme in the SZ's reporting, where also the connection to *Staat (state) and Politik* (politics) is stronger. In the case of Spiegel Online, the theme *Daten* (data) consists of the concepts *Internet* (internet), *Datenschutz* (data protection), *Unternehmen* (companies), *Kritik* (criticism), *private* (private), *Informationen* (information), *Netz* (web), *öffentlich* (public) and *Problem* (problem). The second strongest theme is *Facebook* (facebook), followed by *Deutschland* (Germany), which includes aspects of the *Staat* (state) theme found in the FAZ.

It is important to note that although the same central topic can be identified throughout the German data set, this does not mean that the character of reporting has to be the same. To be more precise, we can only learn from the output that the same issues seem to play crucial roles in all German media analysed, which means that we gain answers to the question *what* is presented. The question of *how* these issues are presented will have to be answered in the qualitative phase of our research.

Apart from the overall focus on the core topic *Daten* (data), there are also differences between the respective media. For example, whereas Facebook and Google are detected as concepts in all media analysed, the news website Spiegel Online also contains the concepts Apple and Microsoft as well as Browser, Software and *Geräte* (devices). Thus, it is hypothesized that Spiegel Online's reporting is more focussed on the "big players" on the one hand and on computer and web technology on the other.

As mentioned, the year 2010 was also analysed separately for the German dataset to reveal which issues might have led to the increase in coverage as detected in chapter 5.1. In case of the FAZ, the most important concept in 2010 is *Wikileaks* (wikileaks), followed by *amerikanischen* (American) and *Google* (google). For the SZ, the top three concepts in 2010 are Google, Facebook and *Netz* (web); for Spiegel Online, these are Google, Facebook and

Online. While the concepts Google in both SZ and Spiegel Online also partly refer to the start of Street View in Germany, Leximancer offers no obvious indication that the previously mentioned events related to *WikiLeaks* and *amerikanischen* are as frequently occurring in the SZ and Spiegel Online as in the FAZ.

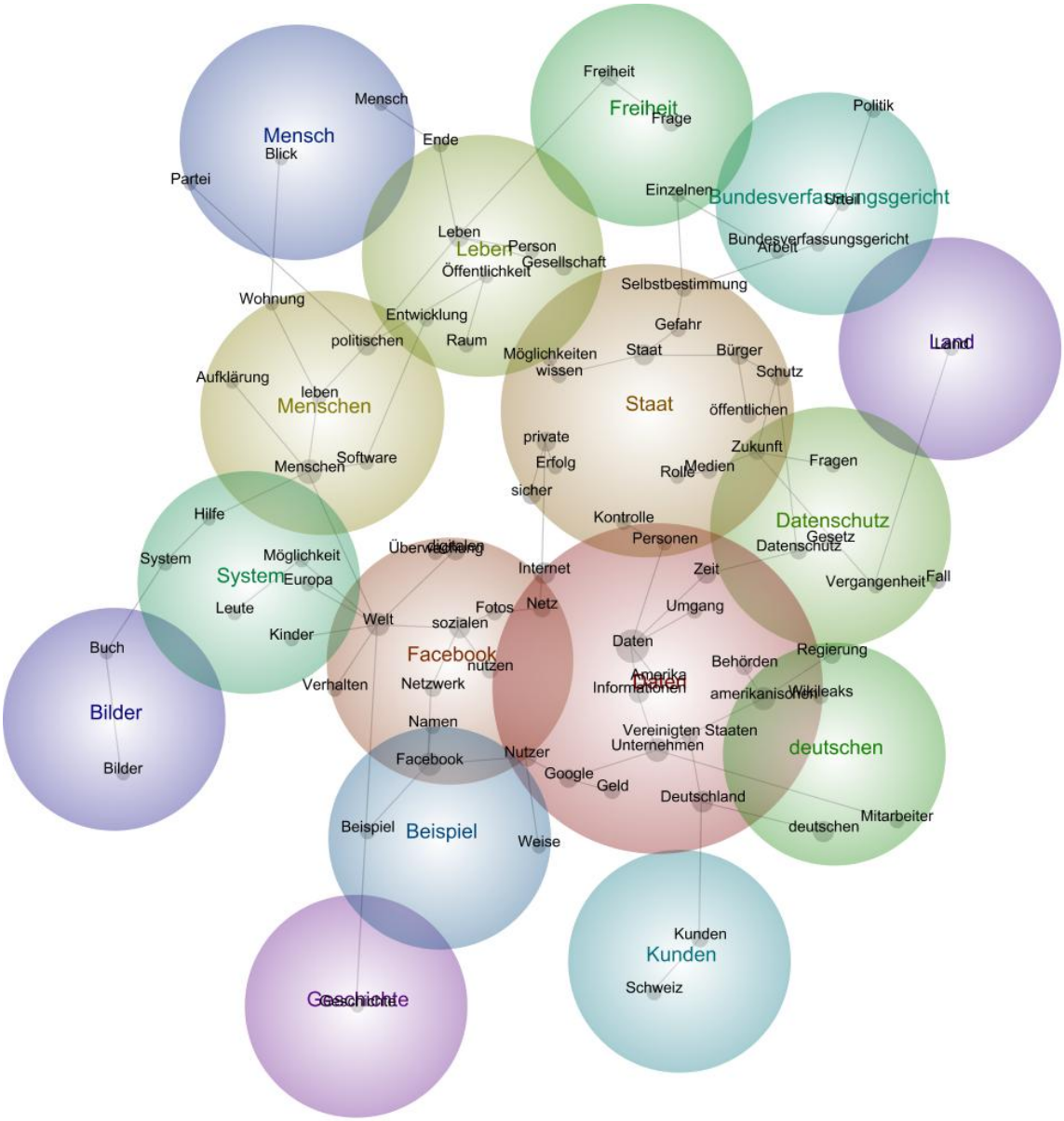

Figure 7: Concept map FAZ 2008 – 2011

Theme	Connectivity	Relevance
Daten	100%	
Facebook	70%	
Staat	69%	
Menschen	29%	
Leben	27%	
Datenschutz	22%	
deutschen	22%	
Freiheit	15%	
System	14%	
Bundesverfassungsgericht	11%	
Kunden	08%	
Beispiel	06%	
Mensch	06%	
Bilder	04%	
Land	03%	
Geschichte	02%	

Figure 8: Theme connectivity list FAZ 2008 – 2011

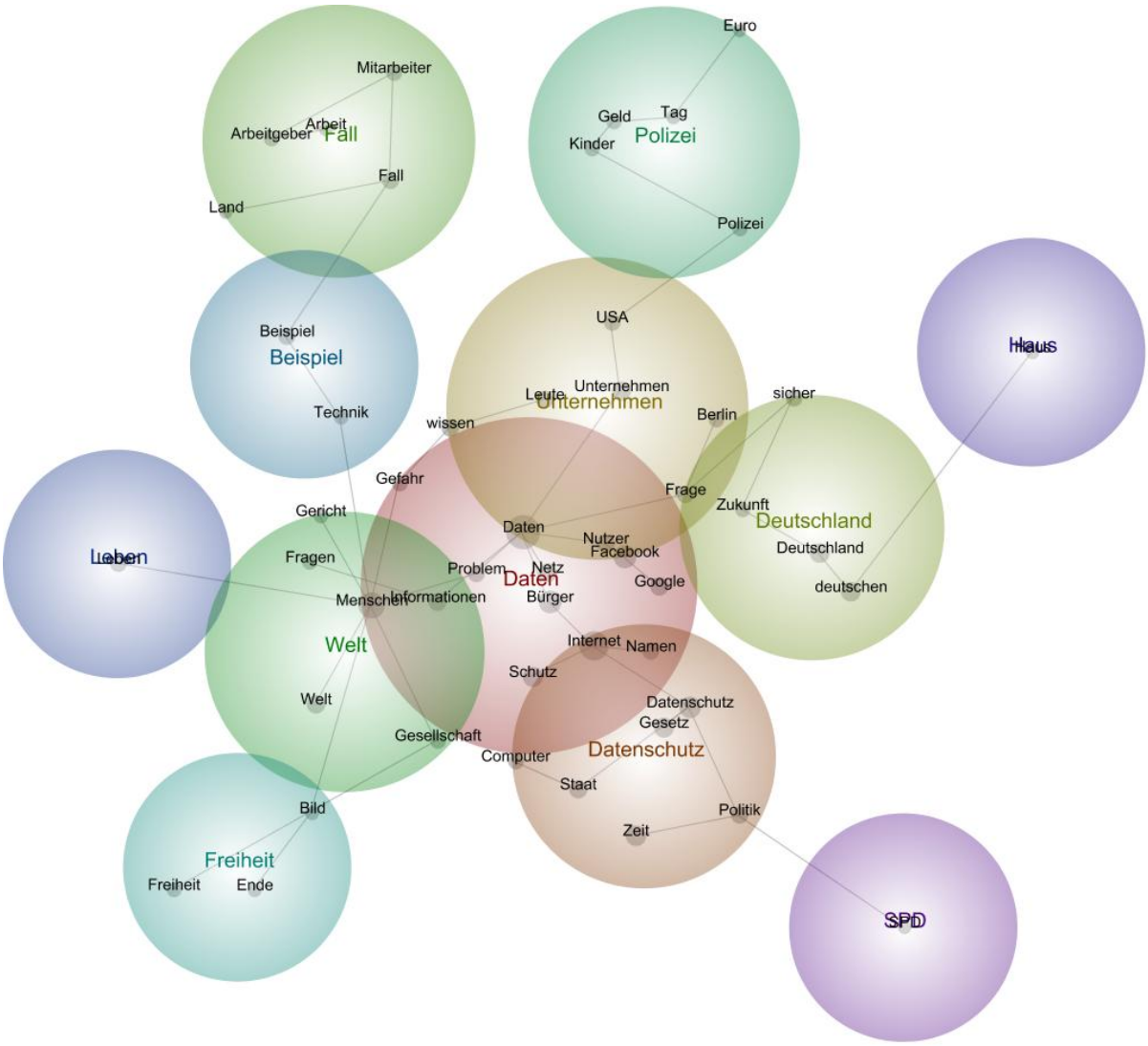

Figure 9: Concept map SZ 2008 – 2011

Theme	Connectivity	Relevance
Daten	100%	
Datenschutz	41%	
Unternehmen	29%	
Deutschland	21%	
Fall	16%	
Welt	15%	
Polizei	14%	
Freiheit	07%	
Beispiel	07%	
Leben	04%	
Haus	02%	
SPD	02%	

Figure 10: Theme connectivity list SZ 2008 – 2011

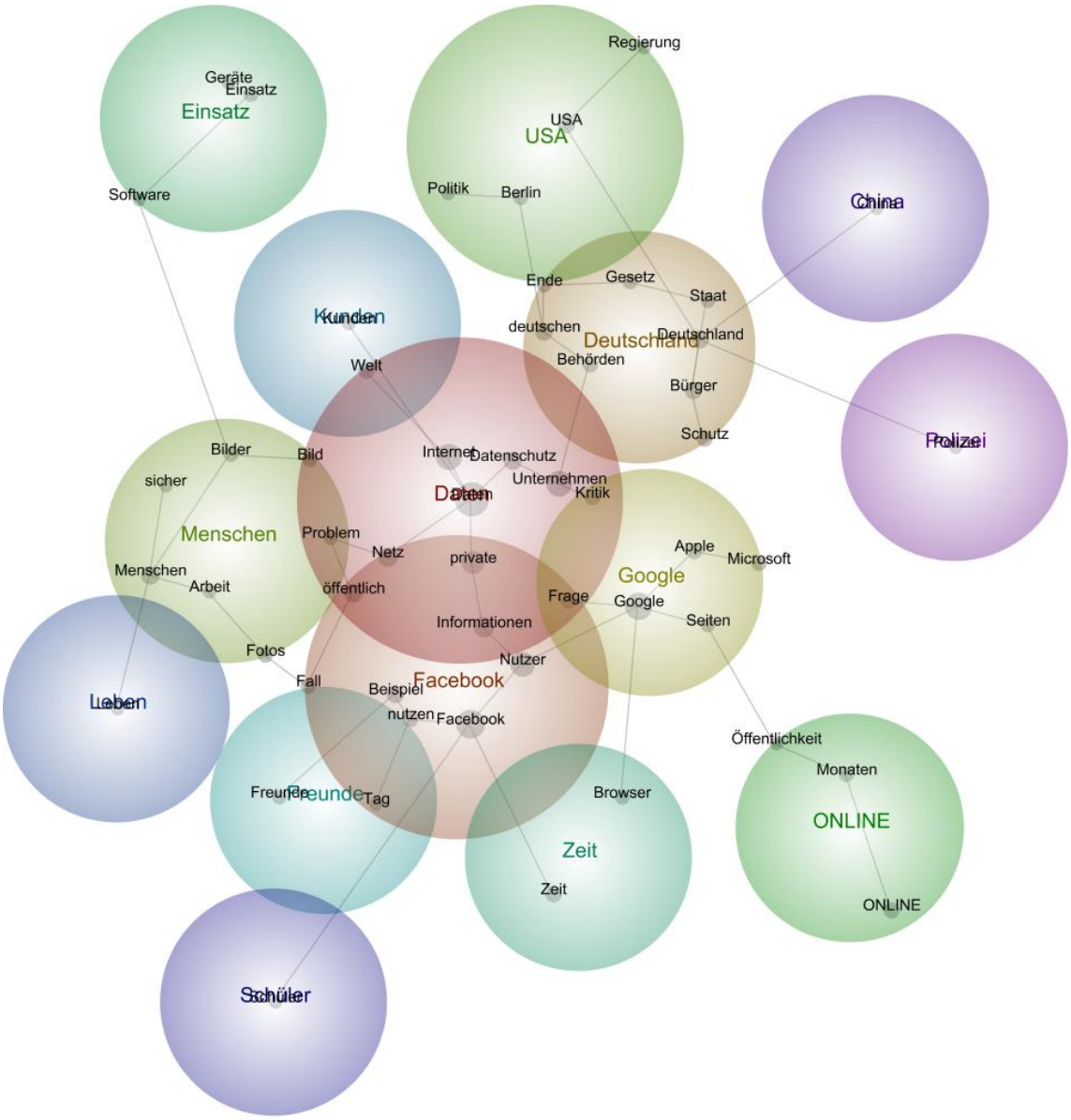

Figure 11: Concept map Spiegel Online 2008 – 2011

Theme	Connectivity	Relevance
Daten	100%	
Facebook	61%	
Deutschland	45%	
Google	40%	
Menschen	31%	
USA	18%	
ONLINE	13%	
Einsatz	10%	
Zeit	10%	
Freunde	07%	
Kunden	04%	
Leben	03%	
Schüler	03%	
China	03%	
Polizei	03%	

Figure 12: Theme connectivity list Spiegel Online 2008 – 2011

5.2.2 United Kingdom

In the UK, although it is less obvious because the themes are named differently, there also is a set of shared topics detected by Leximancer. In the Daily Telegraph (Figure 13), the most frequently occurring theme is phone, consisting of the concepts phone, companies, credit, details, account, card, name, email, provide, mobile, address, tick, receive and cheque. It is followed by a strong use theme with a connectivity rate of 84%, containing the concepts use, data, technology, people, report, others, social, network, site, internet, access, online, website, users, personal, computer, information and system. The theme connectivity list (Figure 14) shows that the reporting is focussed on these two themes, with a much lesser connectivity rate for all other themes.

In the Guardian (Figure 15), there are also two dominant themes, namely internet and information, which are additionally highly connected. The theme internet consists of the concepts network, search, technology, system, social, Google, internet, online, Facebook, software, site, web, users, and shares the following concepts with the theme information: service, computer, email, company, access, website and use. Apart from these shared concepts, the theme information consists of the concepts mobile, personal, data, book, bank, phone, details, information, name, private, records and hacking. There are two other themes in the Guardian that have a connectivity rate higher than 50%, namely government and police, followed by lesser but, compared to other media, still relatively strong themes (police, time, people, home, cameras; see Figure 16), which indicates a relatively broad discussion.

In the Daily Mail (Figure 17), the top ranked theme is information, consisting of access, details, personal, information, data, firm, system, records, lost, use, service, online, internet, phone, computer, Google, company, card and costumers and accordingly containing many aspects of both the internet and information themes in the Guardian's case and the use and phone themes in the Daily Telegraph's case. The second strongest theme (connectivity rate (72%, see Figure 18) is home, which can also be found with a lesser connectivity rate in the Guardian and the Daily Telegraph, but which in the Daily Mail's case together with the themes house and mother forms a whole and more or less separate complex of home and family related issues. Partly this derives from reporting about security and safety at schools, within families and relationships, but also from the newspaper's focus on celebrities and their private life.

For the BBC (Figure 19), the strongest theme detected by Leximancer is people. It consists of the concepts private, information, change, system, service, use, police, people, access and future and therefore contains only parts of the mentioned information/internet/phone/use themes. Other aspects are found in the third and fourth strongest themes users and data, that contain the concepts internet, company, website, users, web, computer, Facebook and sites (theme users) and system, data, personal, work, online, technology (theme data). The second strongest theme within the BBC sample is the theme security, consisting of the concepts security, firm, privacy, concerns, business, place and issue. While it is interesting to observe that both privacy and security as well as concerns cluster together within the same theme, it is important to note that the BBC sample is not directly comparable to the other UK media, as it was not gained from the same database and thus not exactly the same search strategy could be applied (see also Table 1).

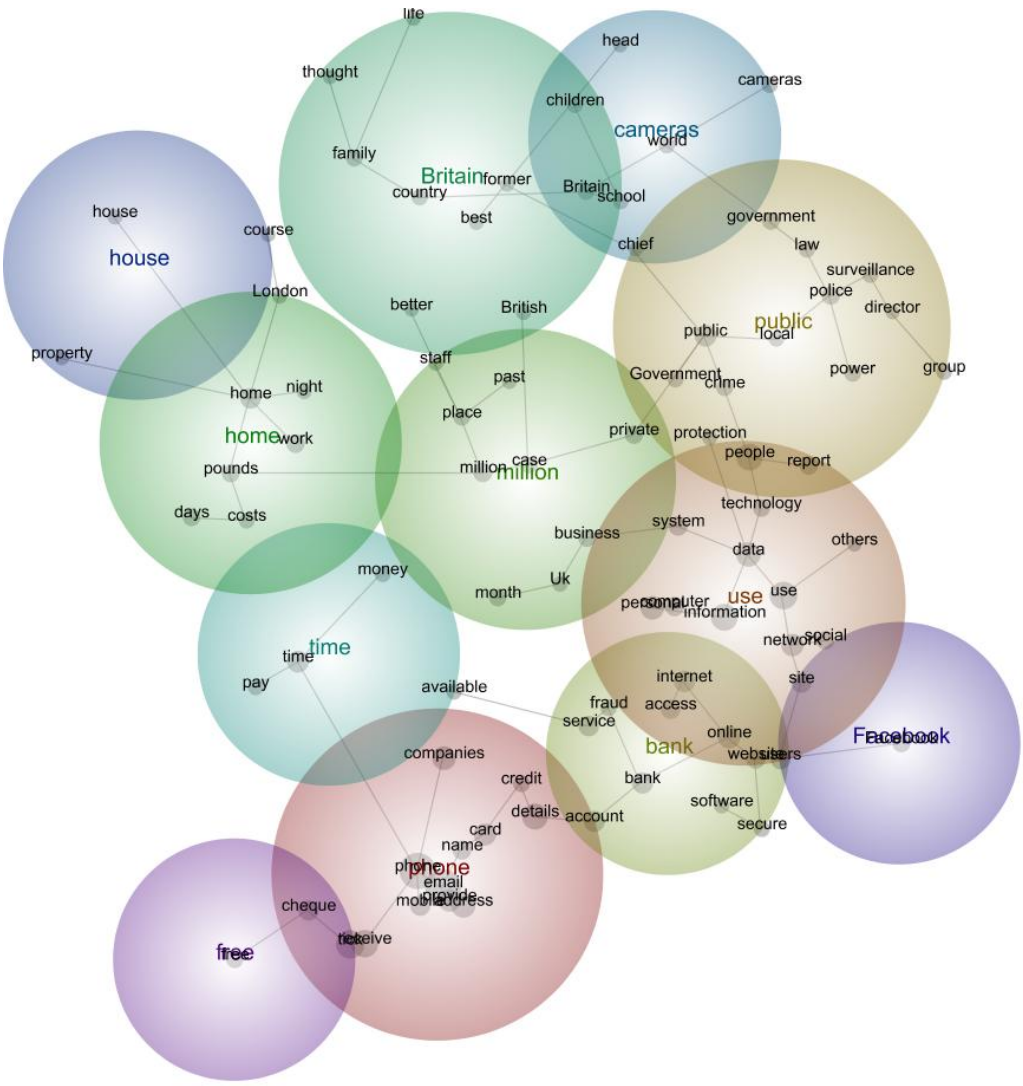

Figure 13: Concept map Daily Telegraph 2008 – 2011

Theme	Connectivity	Relevance
phone	100%	
use	84%	
public	31%	
bank	24%	
million	24%	
home	20%	
Britain	15%	
time	11%	
cameras	11%	
house	04%	
Facebook	03%	
free	03%	

Figure 14: Theme connectivity list Daily Telegraph 2008 – 2011

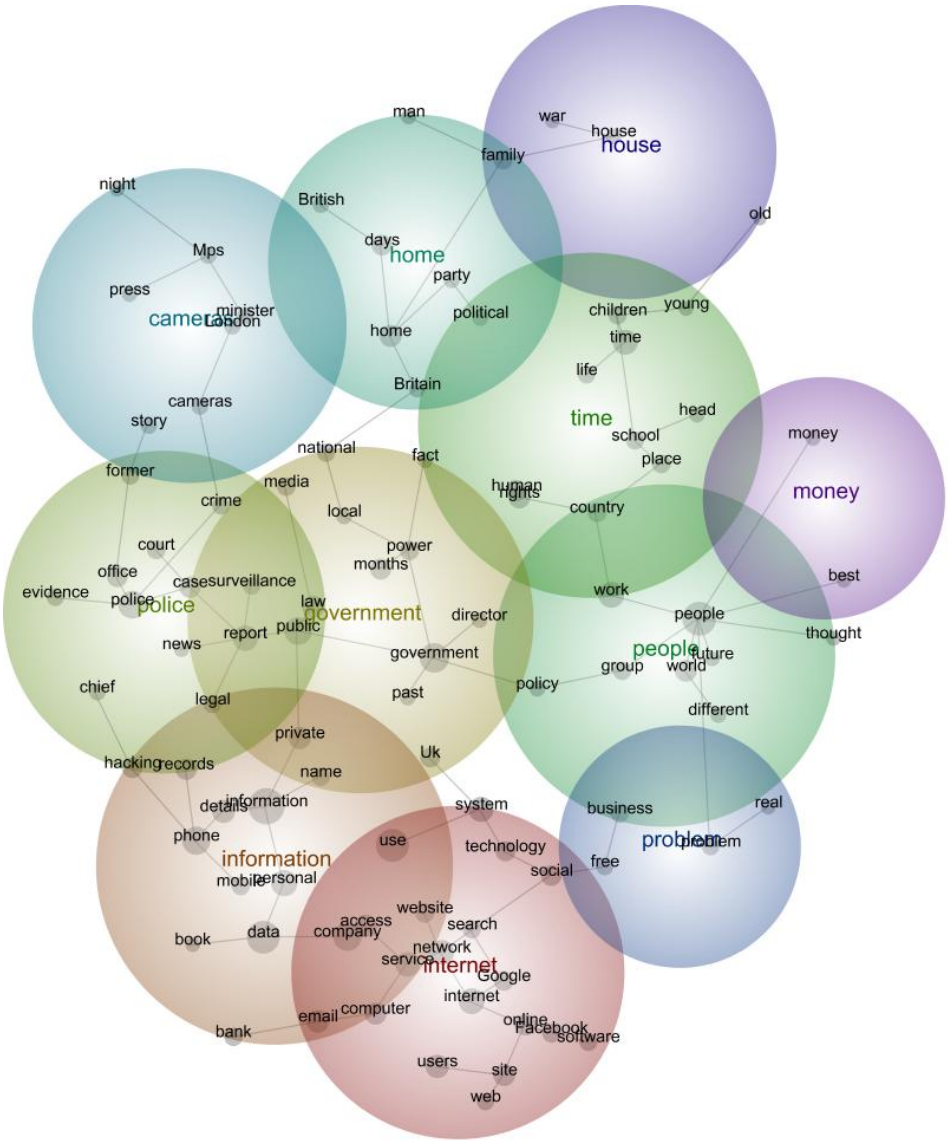

Figure 15: Concept map Guardian 2008 – 2011

Theme	Connectivity	Relevance
internet	100%	
information	91%	
government	60%	
police	59%	
time	44%	
people	43%	
home	28%	
cameras	18%	
problem	08%	
house	05%	
money	04%	

Figure 16: Theme connectivity list Guardian 2008 – 2011

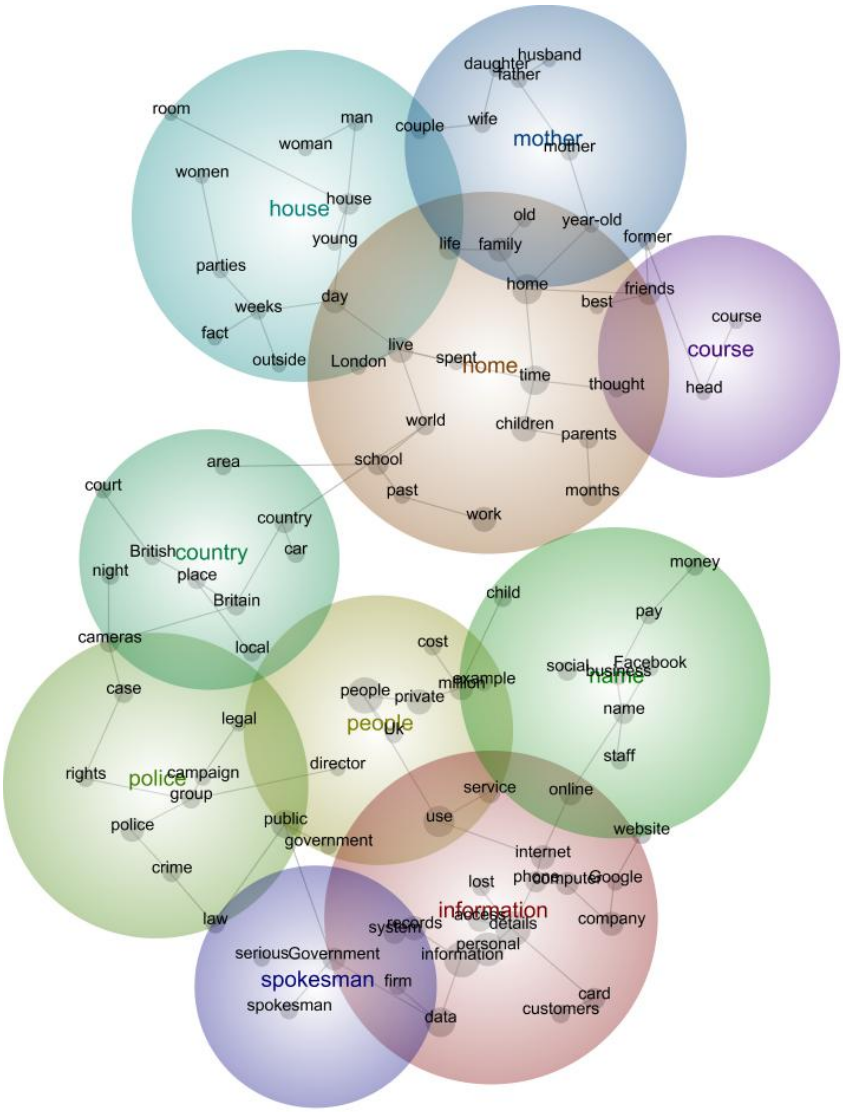

Figure 17: Concept map Daily Mail 2008 – 2011

Theme	Connectivity	Relevance
information	100%	
home	72%	
people	38%	
police	26%	
name	25%	
country	24%	
house	20%	
mother	16%	
spokesman	07%	
course	03%	

Figure 18: Theme connectivity list Daily Mail 2008 – 2011

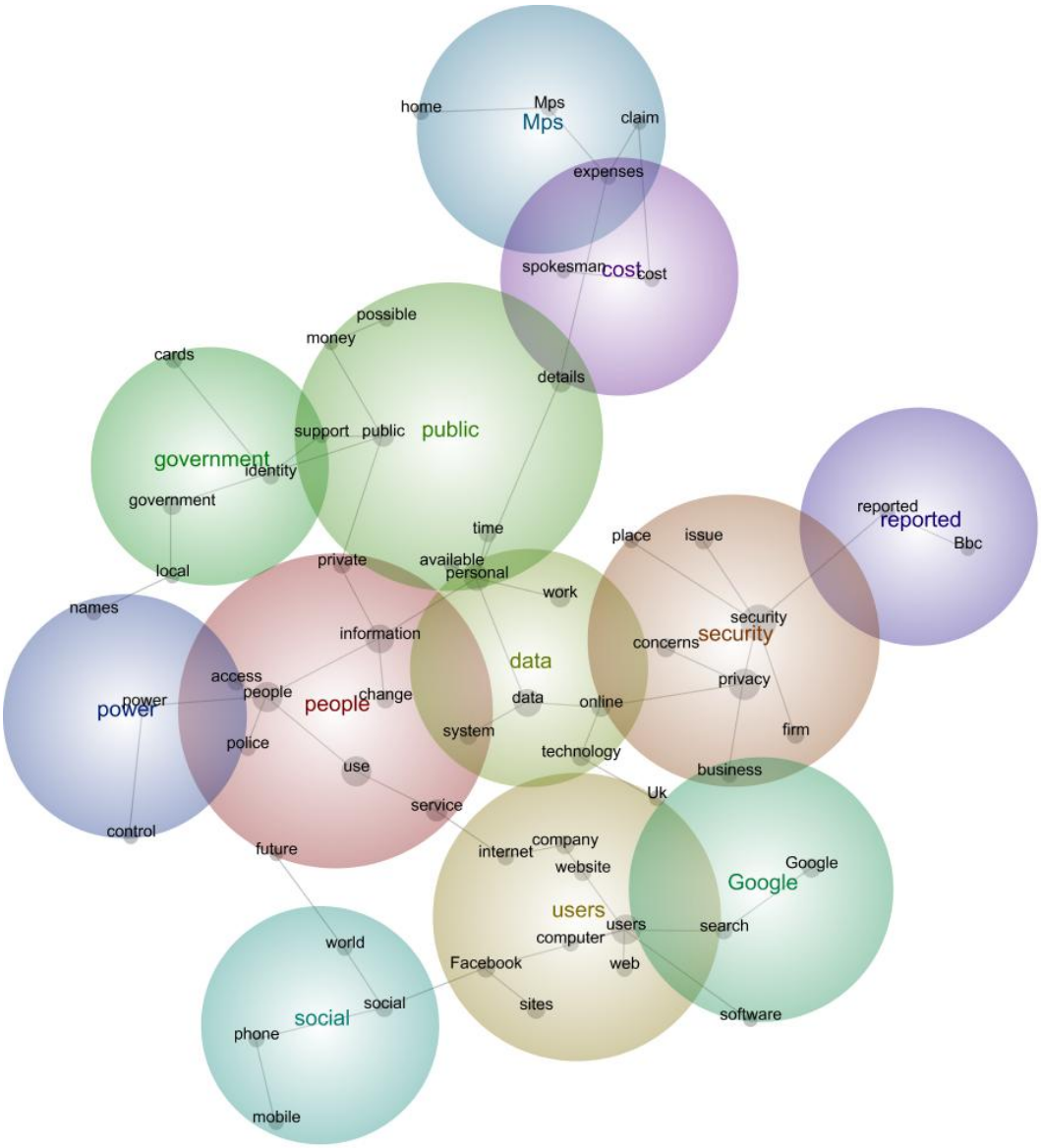

Figure 19: Concept map BBC News 2008 – 2011

Theme	Connectivity	Relevance
people	100%	
security	76%	
users	73%	
data	67%	
public	38%	
government	26%	
Google	22%	
social	21%	
Mps	18%	
power	14%	
reported	09%	
cost	07%	

Figure 20: Theme connectivity list BBC News 2008 – 2011

5.2.3 The Netherlands

The reporting in the Netherlands on privacy and security issues is characterised by the core theme gegevens (data). Accordingly, the strongest theme in De Volkskrant (Figure 21) is gegevens (data), which contains the concepts euro (Euro), burgers (citizens), bedrijven (companies), kans (chance), rechter (judge), Nederlandse (Dutch), gebruik (use), miljoen (million), openbaar (public), voorkomen (occur/appearance/prevention), bijvoorbeeld (for example), informatie (information), telefoon (phone), zaak (case), internet (internet) and ministerie (ministry). It is followed by the theme Nederland (Netherlands), with which it also shares the concept rechter (judge). Apart from that, the theme Nederland (Netherlands) consists of the concepts stelt (sets), muziek (music), land (country), geval (case/event), belang (interest), Nederland (Netherland), samenleving (society), recht (right), strijd (fight) and wet (law). The third strongest theme is, regarding the connectivity rate (Figure 22), almost as connected as the theme Nederland: The theme mensen (people) contains the concepts bepaalde (certain), wereld (world), geld (money), plaats (place), tijd (time), burgemeester (mayor), gedrag (behaviour), werk (work), contact (contact), straat (street), staat (state), moeilijk (difficult).

In the AD (Figure 23), the strongest theme gegevens (data) contains the concepts internet (internet), gebruiken (use), justitie (justice), criminelen (criminals), hand (hand), informatie (information), gegevens (data), belang (interest) and burgers (citizens). The second strongest theme is the theme mensen. It consists of the concepts leven (life/live), land (country), bijvoorbeld (for example), zaak (case), soort (kind), mensen (people), Rotterdam (Rotterdam), and gemeente (municipality). With a connectivity rate of 61% (see Figure 24), the theme politie (police) groups the concepts foto (photo), beelden (images), camera (camera), minister (minister), politie (police), media (media), straat (street), kritiek (criticism) and rechter (judge).

In De Telegraaf (Figure 25), the most frequently occuring and co-occuring theme gegevens (data) consists of the concepts gebruik (use), persoonlijke (personal), soort (kind), veilig (safe/secure), druk (print), zorgen (worry/concern), informatie (information), kabinet (cabinet), plaats (place), gegevens (data), mensen (people), leven (life/live) and bedrijf (company). With a connectivity rate of 93% (Figure 26), the theme politie (police) contains the concepts belang (interest), buiten (outside), politie (police), agenten (agents/officers), auto (car), vragen (request/to question/questions), vertrouwen (trust), deelnemers (participants), media (media), zaak (case), straat (street) and systeem (system). All other themes are significantly lesser connected. The third strongest theme, however, is the theme overheid (government), grouping the concepts kabinet (cabinet), wet (law), overheid (government), burgers (citizens), deelnemers (participants), EPD (Dutch Electronic Patient Record System; a national infrastructure that enables data exchange between electronic patient recors) and stelt (sets).

Within the NOS sample, the theme gegevens (data) consist of the concepts informatie (information), burgers (citizens), veiligheid (safety/security), systeem (sytem), gegevens (data), vragen (request/to question/questions), mensen (people), paspoort (passport), vingerafdrukken (fingerprints), opgeslagen (stored) and opslaan (save). The second strongest theme is the theme software, that consists of the concepts Nederlandse (Dutch), software (software), bedrijf (company), justitie (justice), Europese (European) kabinet (cabinet) and Nederland (Netherlands). It is followed by the theme minister, which contains that concepts veiligheid (safety/security), kaart (card), minister (minister), justitie (justice), Opstelten

(Name of the Dutch Minister of Security and Justice), gebruik (use) and overheid (government).

Again, it is important to note that the NOS sample is not directly comparable to the other Dutch media, as it was not gained from the same database and thus not exactly the same search strategy could be applied (see also Table 1).

Apart from the mentioned most frequently occurring and co-occurring themes and concepts, there are some additional concepts that provide insight into the national discourse. In the AD sample for example, the concept ov-chipkaart appears within the theme overheid (government). The OV-chipkaart (abbreviated from Openbaarvervoerchipkaart) is a contactless smart card system that is used for all public transport in the Netherlands. It fully replaced the former system of regular paper tickets (except in trains) in November 2011. The introduction was accompanied by public discussion about the built-in security method that should prevent the personal and travel data stored in the system from being misused.

Other issues of national relevance are Schiphol, showing explicitly in the De Telegraaf sample within the theme euro, and the concept fouilleren in the NOS sample, that refers to the police being able to randomly stop people and search their bags preventively in declared risky areas.

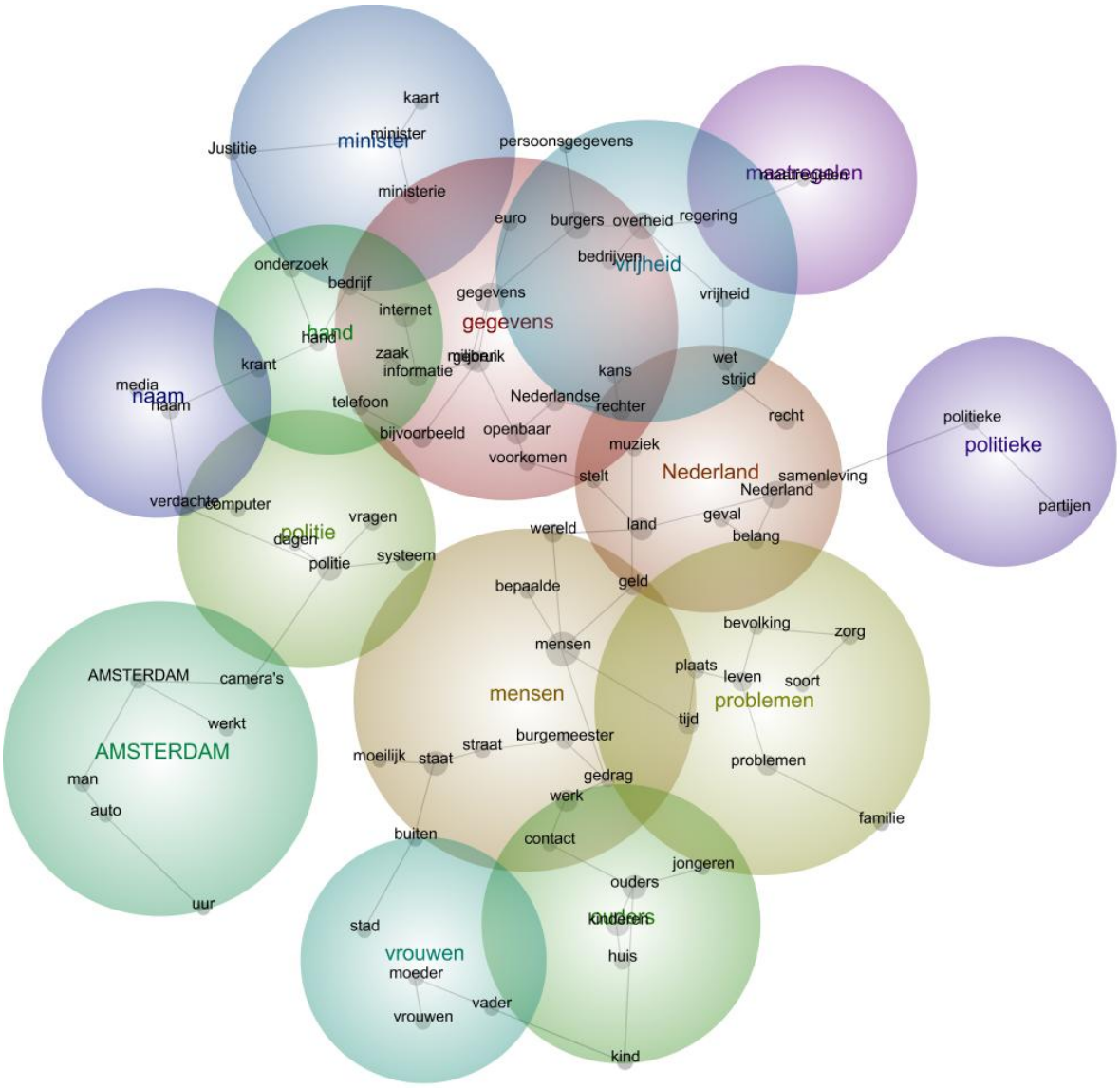

Figure 21: Concept map Volkskrant 2008 – 2011

Theme	Connectivity	Relevance
gegevens	100%	
Nederland	67%	
mensen	62%	
problemen	41%	
politie	37%	
ouders	36%	
hand	29%	
AMSTERDAM	20%	
vrouwen	20%	
vrijheid	18%	
minister	15%	
naam	09%	
politieke	08%	
maatregelen	03%	

Figure 22: Theme connectivity list Volkskrant 2008 – 2011

Figure 23: Concept map AD 2008 – 2011

Theme	Connectivity	Relevance
gegevens	100%	
mensen	69%	
politie	61%	
tijd	49%	
overheid	47%	
staat	30%	
groep	23%	
vrouw	22%	
onderzoek	19%	
bedrijven	07%	
systeem	06%	
gevaar	04%	

Figure 24: Theme connectivity list AD 2008 – 2011

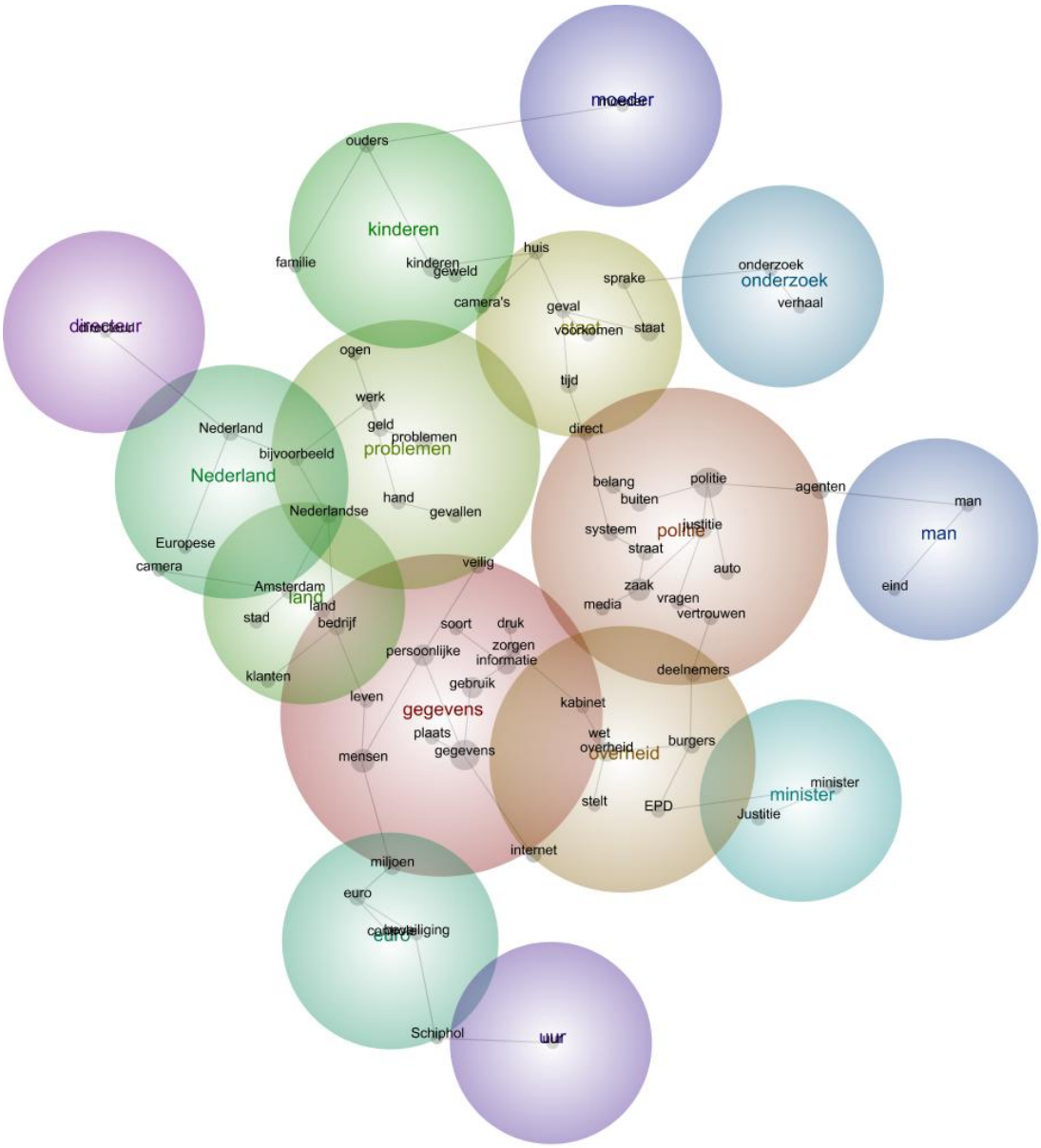

Figure 25: Concept map Telegraaf 2008 – 2011

Theme	Connectivity	Relevance
gegevens	100%	
politie	93%	
overheid	46%	
staat	45%	
problemen	40%	
land	35%	
kinderen	23%	
Nederland	19%	
euro	17%	
minister	11%	
onderzoek	08%	
man	06%	
moeder	03%	
uur	03%	
directeur	02%	

Figure 26: Theme connectivity list Telegraaf 2008 – 2011

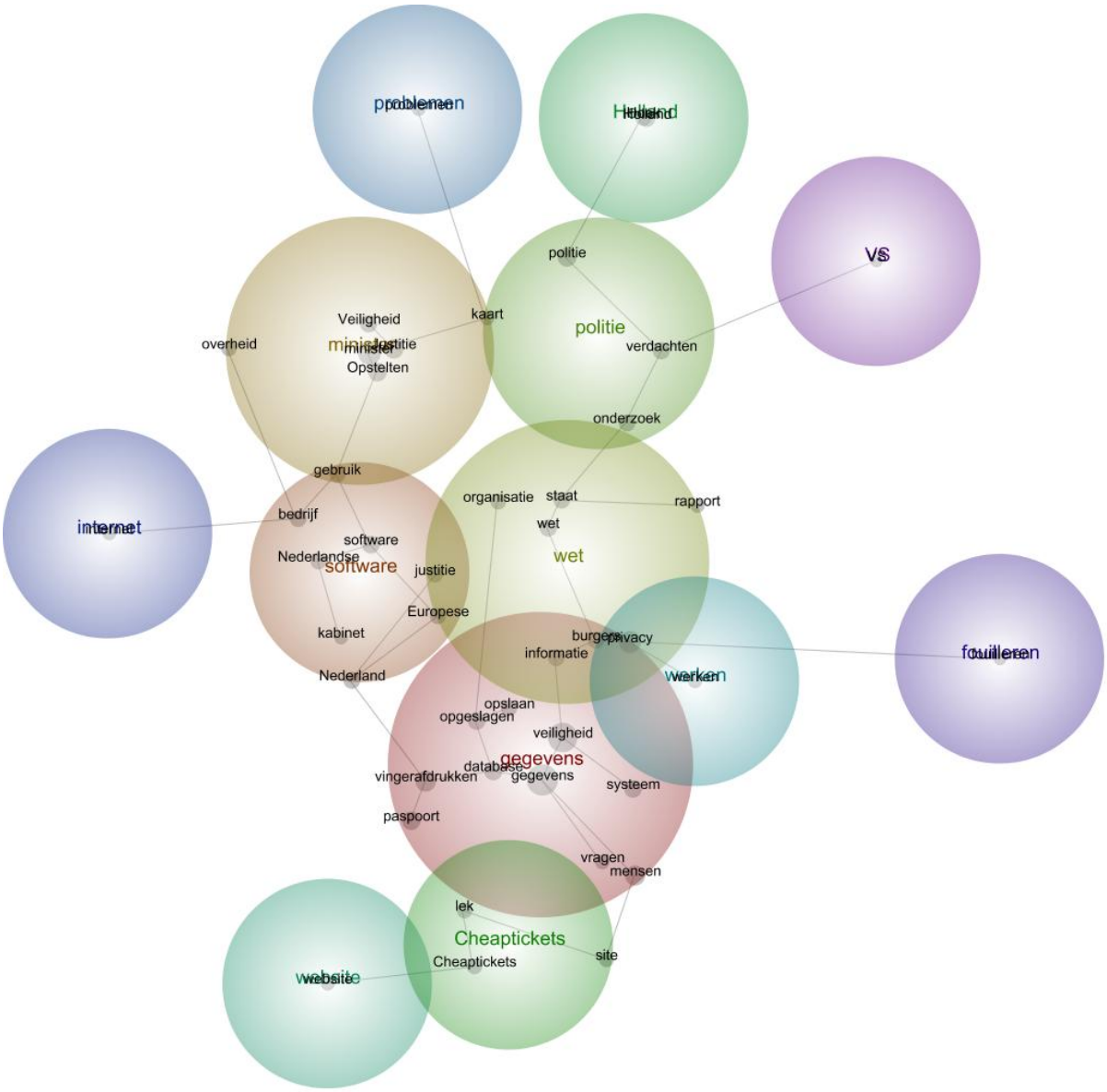

Figure 27: Concept map NOS 2008 – 2011

Theme	Connectivity	Relevance
gegevens	100%	
software	38%	
minister	36%	
wet	30%	
politie	21%	
Cheaptickets	12%	
Holland	11%	
website	03%	
problemen	03%	
werken	03%	
internet	02%	
fouilleren	02%	
VS	01%	

Figure 28: Theme connectivity list NOS 2008 – 2011

5.2.4 Comparative Analysis

As the German tabloid BILD had to be excluded from this part of the analysis, the following description is based on the analysis of each of the primary countries' quality newspapers and online media only to allow for of comparative analysis. Additionally to the above provided concept maps for each of the media, in this chapter we provide the aggregated concept maps representing the media discourse on privacy and security in each of the primary countries.

Looking at the German media landscape as represented in the Leximancer concept map (Figure 29) and theme connectivity list (Figure 30), it is obvious that there is a clear focus on data related issues when it comes to reporting about privacy and security. Taking into account the concepts that appear within the theme Daten (data) – Informationen (information), Umgang (handling), persönlichen (personal), Facebook (Facebook), Internet (internet), Netz (web), nutzen (use), Fotos (photos), Staat (state), private (private), Nutzer (user), Bürger (citizens), Schutz (protection), schützen (protect), Gesetz (law), Google (Google), Unternehmen (companies), Datenschutz (data protection), Kontrolle (control) – we reason that informational security and privacy is the most frequently covered issue. Handling of personal information, use of the internet in general and social networks in particular are important parts of this theme. The direct link between Bürger (citizens) and Staat (state) and their position in the very near of the group expresses that both are mentioned frequently together in data related contextes. In a similar way, the concepts Schutz (protection), schützen (protect), Gesetz (law), Personen (people) and Überwachung (surveillance) group together, indicating the related discourse on surveillance and protection of people. Another cluster is made up by the concepts Google (Google), Unternehmen (companys), Datenschutz (data protection), Bild (picture/image), with a direct link to Kritik (criticism), Behörden (agencies) and Kontrolle (control), which refers to the role of agencies in establishing data protection issues. Finally, the clustering of the concepts digitalen (digital), Möglichkeit and Möglichkeiten (opportunity/chance and oppurtunities/chances), Fragen (questions), Rolle (role), Gefahr (danger/thread) and sozialen (social) indicates a discussion about the opportunities and threads of digital technologies that societies face.

Exploring the situation in the UK (Figure 31 and Figure 32), the first finding is that the discovered concepts are spread more evenly than in Germany. Taking into account the central theme information, the most frequently occurring and co-occurring concepts in the UK reporting about privacy and security are data, details, account, name, personal, information, use, access, service, internet, company, future, phone, mobile, email, offers, bank, address, card and available. These concepts refer to the use and misuse of personal information, logging of mobile phones, data theft (credit card details, addresses, passwords) from companies' websites, monitoring of credit card reports to detect fraudulent activity, the debate on identity cards. The second strongest theme public, consisting of the concepts police, surveillance, crime, power, chief, interest, report, example, private, government, public, legal, case, law, court, human rights, office and lost, mainly refers to the coverage on surveillance of public locations, CCTV, and the risks of privacy infringements. The third strongest theme network (concepts social, network, technology, search, use, system, million, business, computer, site, Facebook, online, website, users, web, software, future, company, service, access) has a lot of overlaps with the information theme, but also refers to social networks in general and Facebook in particular.

In the Netherlands (Figure 33 and Figure 34), the strongest theme gegevens (data) groups the concepts Nederland (Netherlands), overheid (government), wet (law), Amerikaanse

(american), strijd (fight), land (country), burgers (citizens), rechter (judge), wereld (world), internet (internet), vragen (request/to question/questions), voorkomen (occur/appearance/prevention), informatie (information), gebruik (use) and Nederlandse (Dutch). Unlike in Germany and the UK, there is no concept that refers to Facebook or social networks in general. While this does not necessarily mean that these issues are not covered by the Dutch media, there is at least no indication that these issues appear consistently in the context of data and information. The second and third strongest themes, consisting of the concepts mensen (people), plaats (place), zaken (things/cases/affairs), krant (newspaper), soort (kind), staat (state), straat (street), tijd (time), werk (work), kinderen (children), burgers (citizens), verdachte (suspect), naam (name), geweld (violence), politie (police), kosten (cost), geld (money), camera's (cameras), hand (hand) and telefoon (phone) explored together refer to, among others, the storage of DNA samples, the security scanners at Amsterdam Airport Schiphol, the frisking of people on the street or in other public areas and the use of cameras on highways, in courts and stadiums.

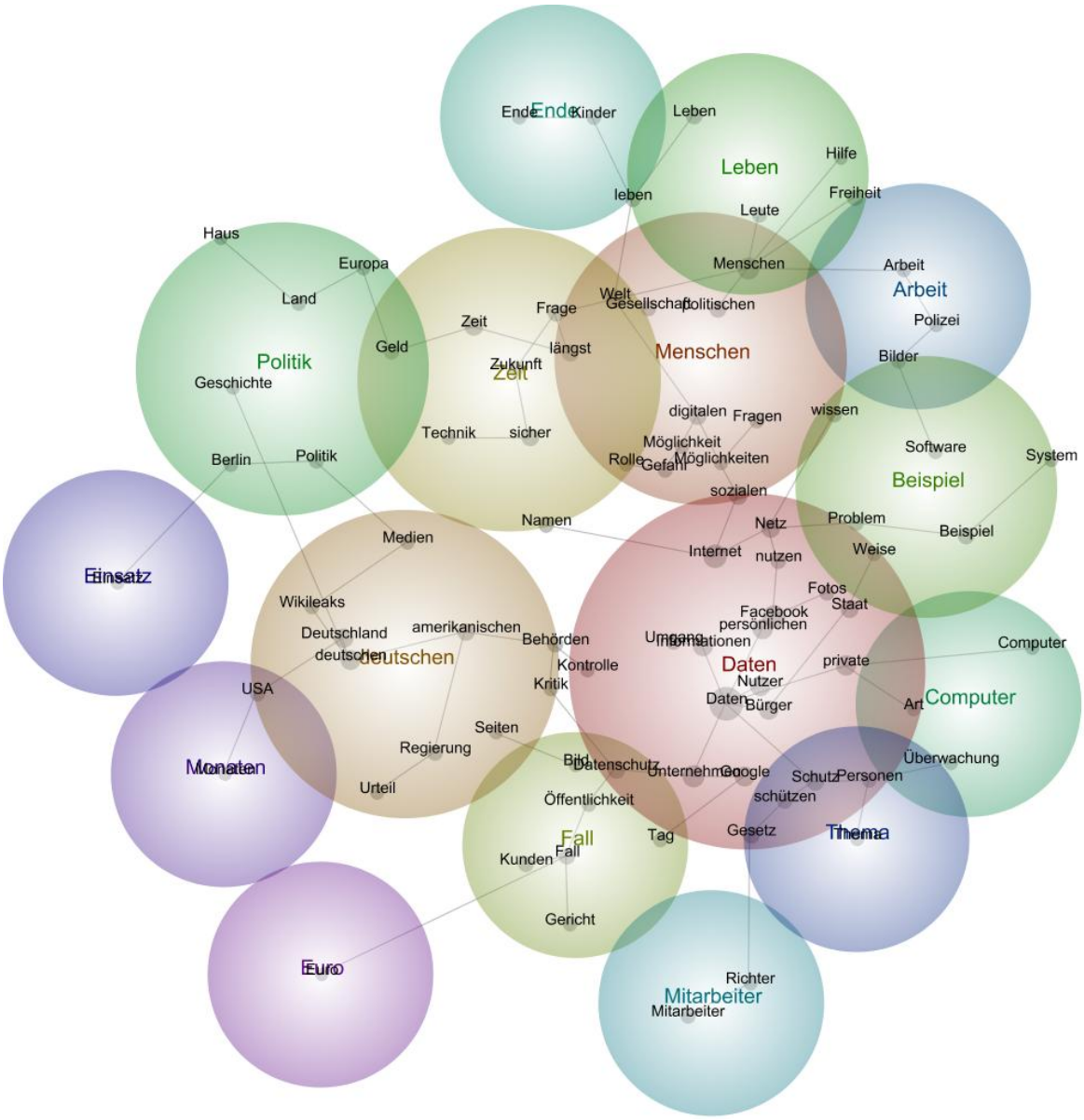

Figure 29: Concept map Germany - FAZ, SZ, Spiegel Online 2008 – 2011

Theme	Connectivity	Relevance
Daten	100%	
Menschen	32%	
deutschen	28%	
Zeit	22%	
Fall	11%	
Beispiel	11%	
Leben	10%	
Politik	09%	
Computer	04%	
Ende	03%	
Mitarbeiter	03%	
Arbeit	03%	
Thema	01%	
Einsatz	01%	
Monaten	01%	
Euro	01%	

Figure 30: Theme connectivity list Germany - FAZ, SZ, Spiegel Online 2008 – 2011

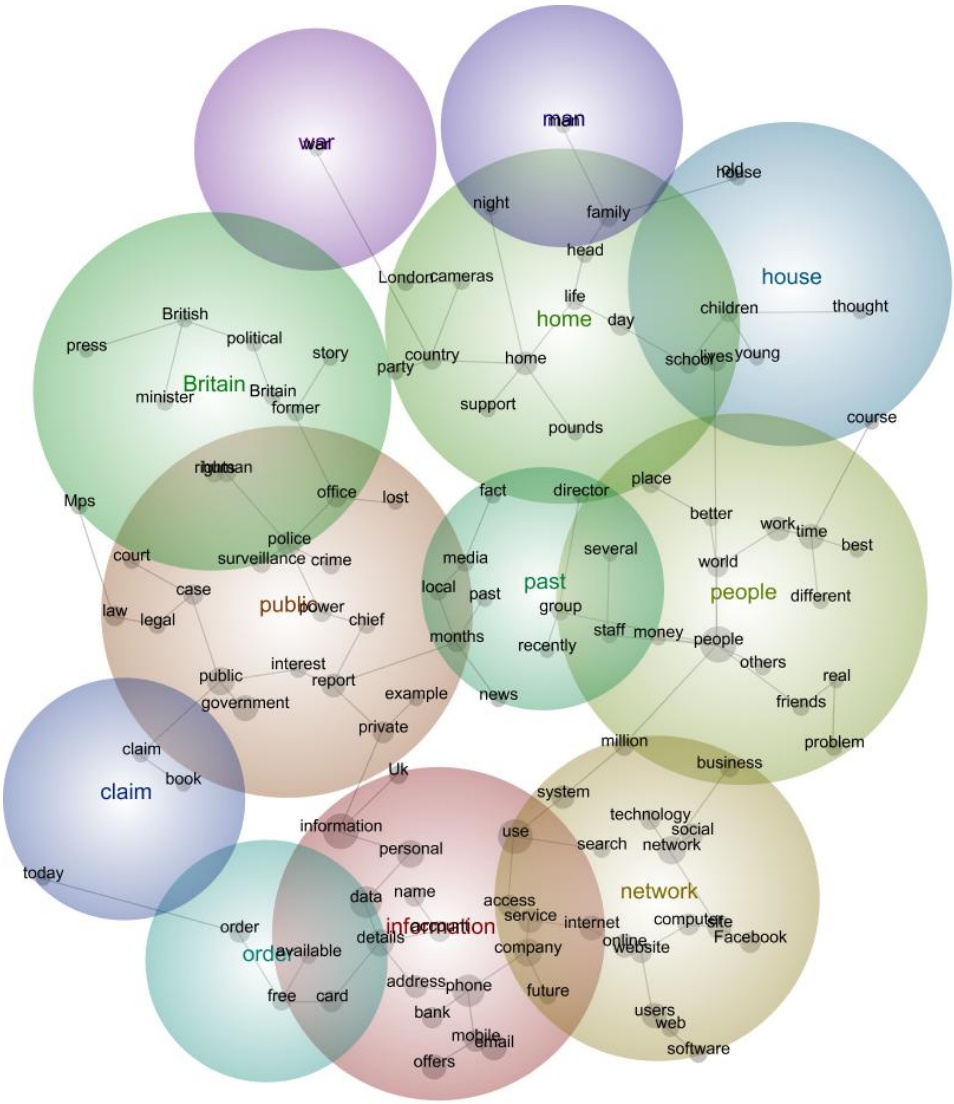

Figure 31: Concept map UK - Telegraph, Guardian, BBC News 2008 – 2011

Theme	Connectivity	Relevance
information	100%	
public	67%	
network	62%	
people	41%	
home	34%	
Britain	13%	
past	09%	
order	08%	
house	06%	
claim	04%	
man	01%	
war	01%	

Figure 32: Theme connectivity list UK - Telegraph, Guardian, BBC News 2008 – 2011

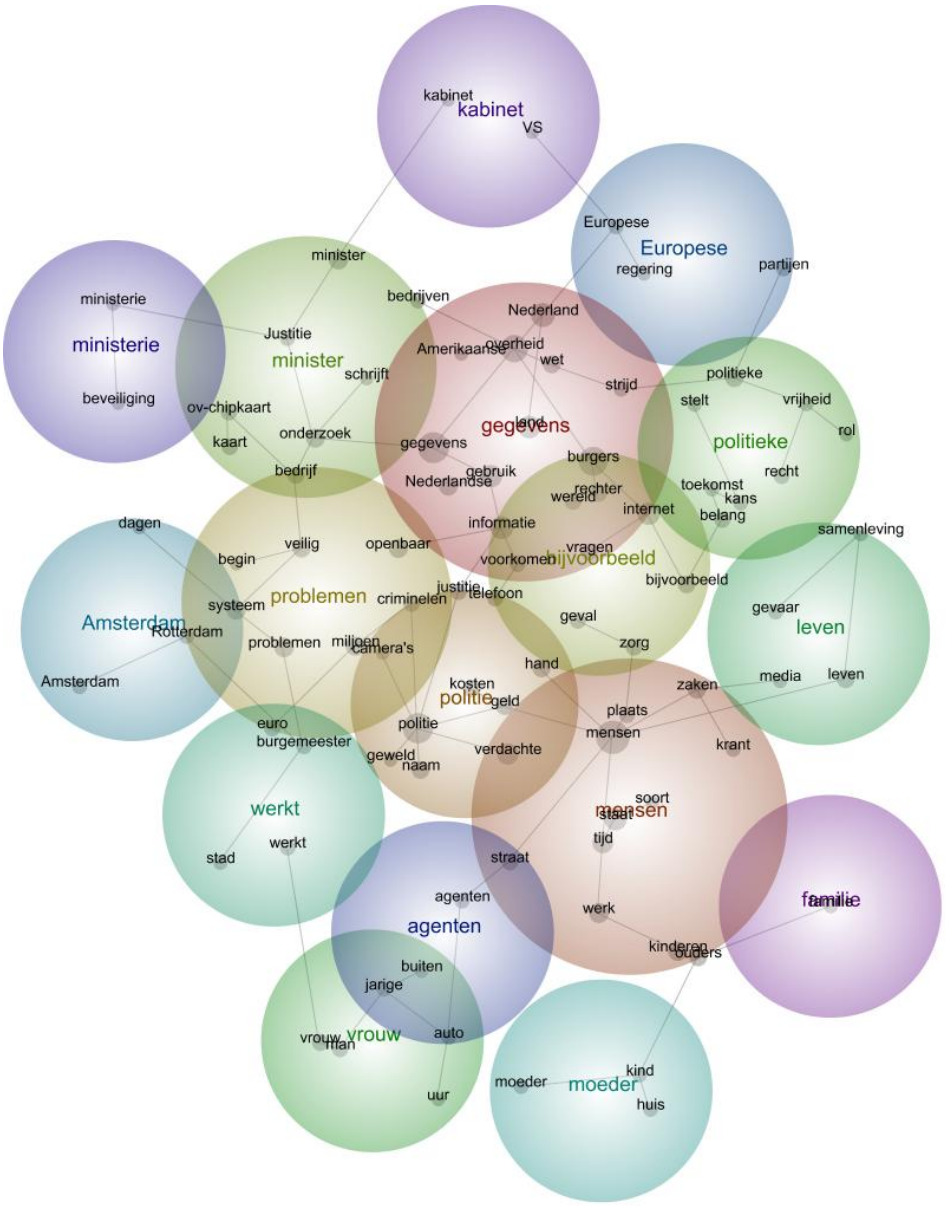

Figure 33: Concept map NL - Volkskrant, AD, NOS 2008 – 2011

Theme	Connectivity	Relevance
gegevens	100%	
mensen	70%	
politie	54%	
problemen	48%	
bijvoorbeeld	32%	
minister	30%	
politieke	27%	
vrouw	17%	
leven	15%	
werkt	10%	
moeder	10%	
Amsterdam	09%	
Europese	09%	
agenten	06%	
ministerie	04%	
kabinet	04%	
familie	03%	

Figure 34: Theme connectivity list NL - Volkskrant, AD, NOS 2008 – 2011

5.2.5 Situation in 2011

With regards to the upcoming PRISMS survey, a separate analysis for 2011 was conducted, as this year of analysis is closest to the actual time and therefore the issues presented in the media might be reflected in citizens' opinions.

In the German coverage of privacy and security issues in 2011 (Figure 35 and Figure 36), the most frequently occurring and co-occurring theme is Menschen (people), consisting of the concepts Möglichkeiten (chances/opportunities), längst (long ago), Welt (World), Zeit (time), Menschen (people), Datenschutz (data protection), Unternehmen (companies), Netz (web), Informationen (information), Beispiel (example) and Internet (internet), which means that data protection issues have been frequently occurring together in the context of internet and information related issues. The theme Facebook (concepts Facebook, Daten (data), Namen (names), Informationen (information), Beispiel (example), Leute (people), Anonymous, Google, Apple, Wikileaks) shows that frequent reporting on "the big players" on the one hand and on Anonymous and Wikileaks on the other took place. Taking into account the theme connectivity list, all other themes and thus issues in coverage of privacy and security were muss less frequently found in 2011.

The UK coverage of privacy and security issues in 2011 (Figure 37 and Figure 38) reveals a strong use theme (concepts information, personal, computer, company, mobile, details, hackers, data, card, users, access, service, internet, use, system, group, network, technology), followed by the theme phone (concepts report, hacking, phone, email, information, private, name, order, published, police, director, public, crime). Also in the UK, all other themes are found much less frequent.

The NL coverage of privacy and security issues in 2011 (Figure 39 and Figure 40) is focused on the core theme politie (police), consisting of gegevens (data), overheid (government), systeem (system), veilig (safe/secure), gebruik (use), bijvoorbeeld (for example), informatie (information), internet (internet), auto (car), politie (police), verdachten (suspects), geval (case/event) and burgers (citizens). Again, all other themes appear less frequently.

Overall, the concentration on one or two core themes indicates a relatively narrow discussion in all of the primary countries.

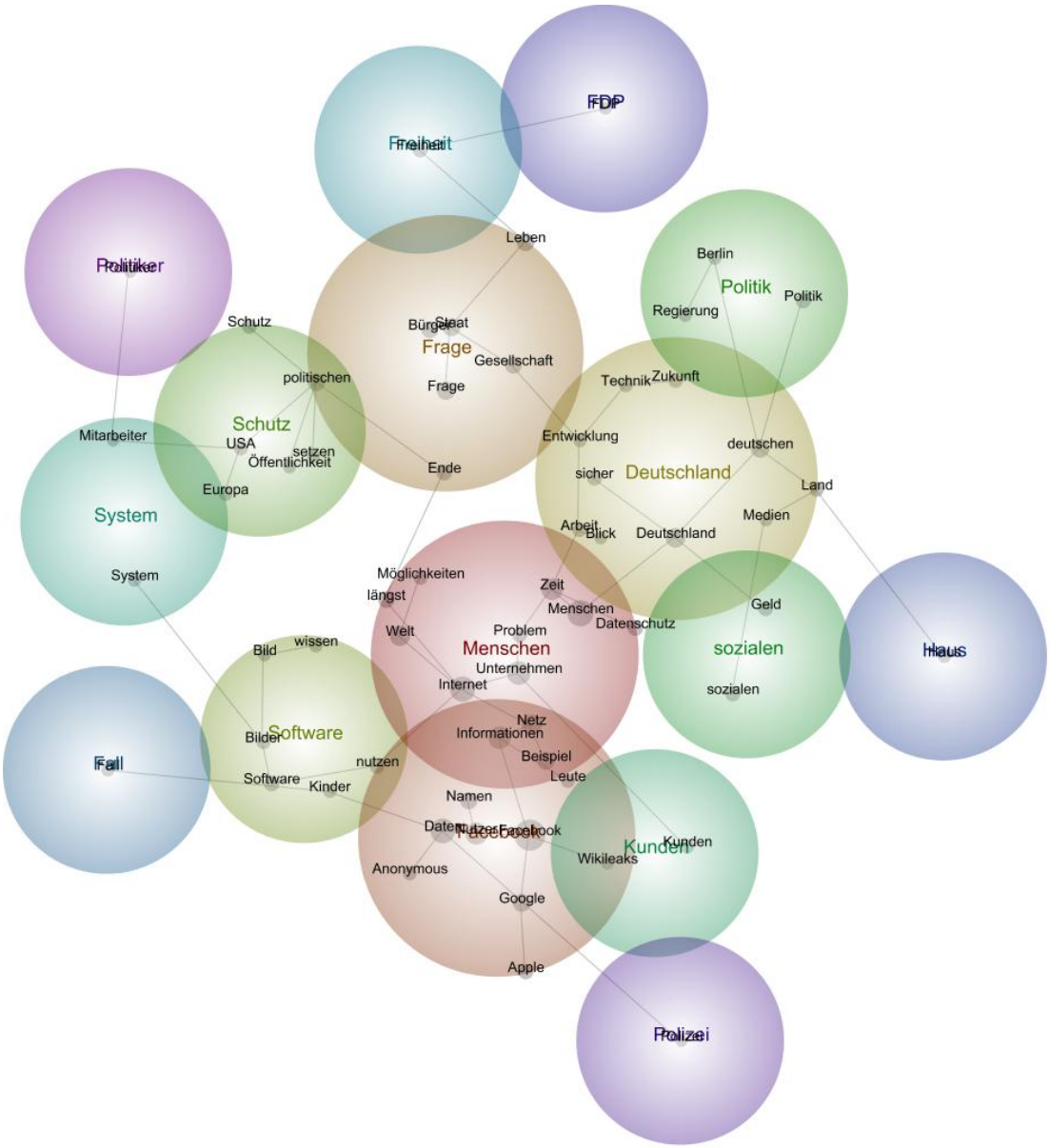

Figure 35: Concept map Germany 2011 - FAZ, SZ, Spiegel Online

Theme	Connectivity	Relevance
Menschen	100%	
Facebook	76%	
Frage	47%	
Deutschland	45%	
Software	23%	
Schutz	18%	
Politik	11%	
sozialen	09%	
Kunden	07%	
System	06%	
Freiheit	05%	
Fall	03%	
Haus	03%	
FDP	02%	
Polizei	02%	
Politiker	02%	

Figure 36: Theme connectivity list Germany 2011 - FAZ, SZ, Spiegel Online

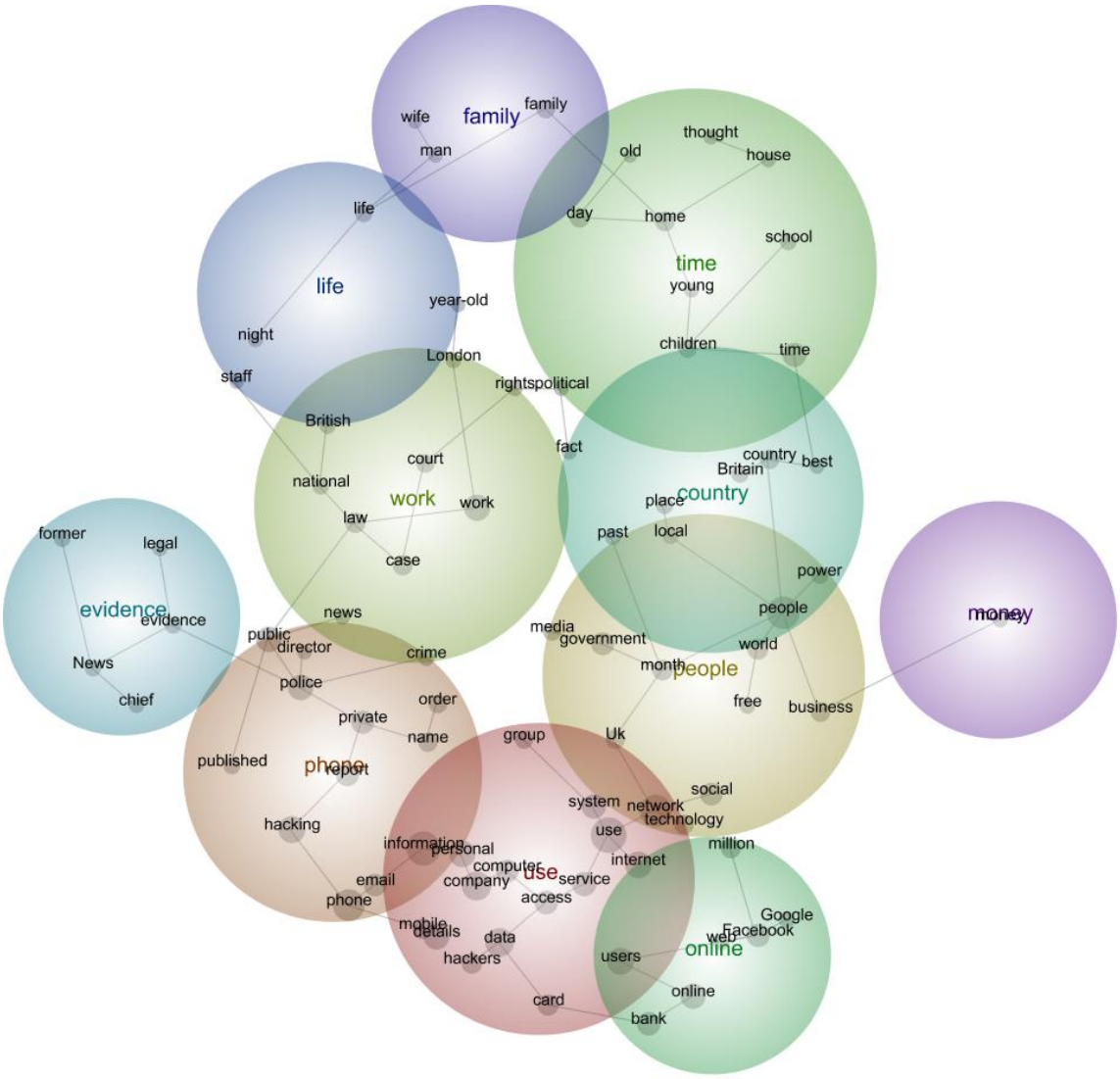

Figure 37: Concept map UK 2011 - Daily Telegraph, Guardian, Daily Mail, BBC News

Theme	Connectivity	Relevance
use	100%	
phone	48%	
people	35%	
work	26%	
time	23%	
online	22%	
country	17%	
evidence	10%	
life	06%	
family	05%	
money	01%	

Figure 38: Theme connectivity list UK 2011 - Daily Telegraph, Guardian, Daily Mail, BBC News

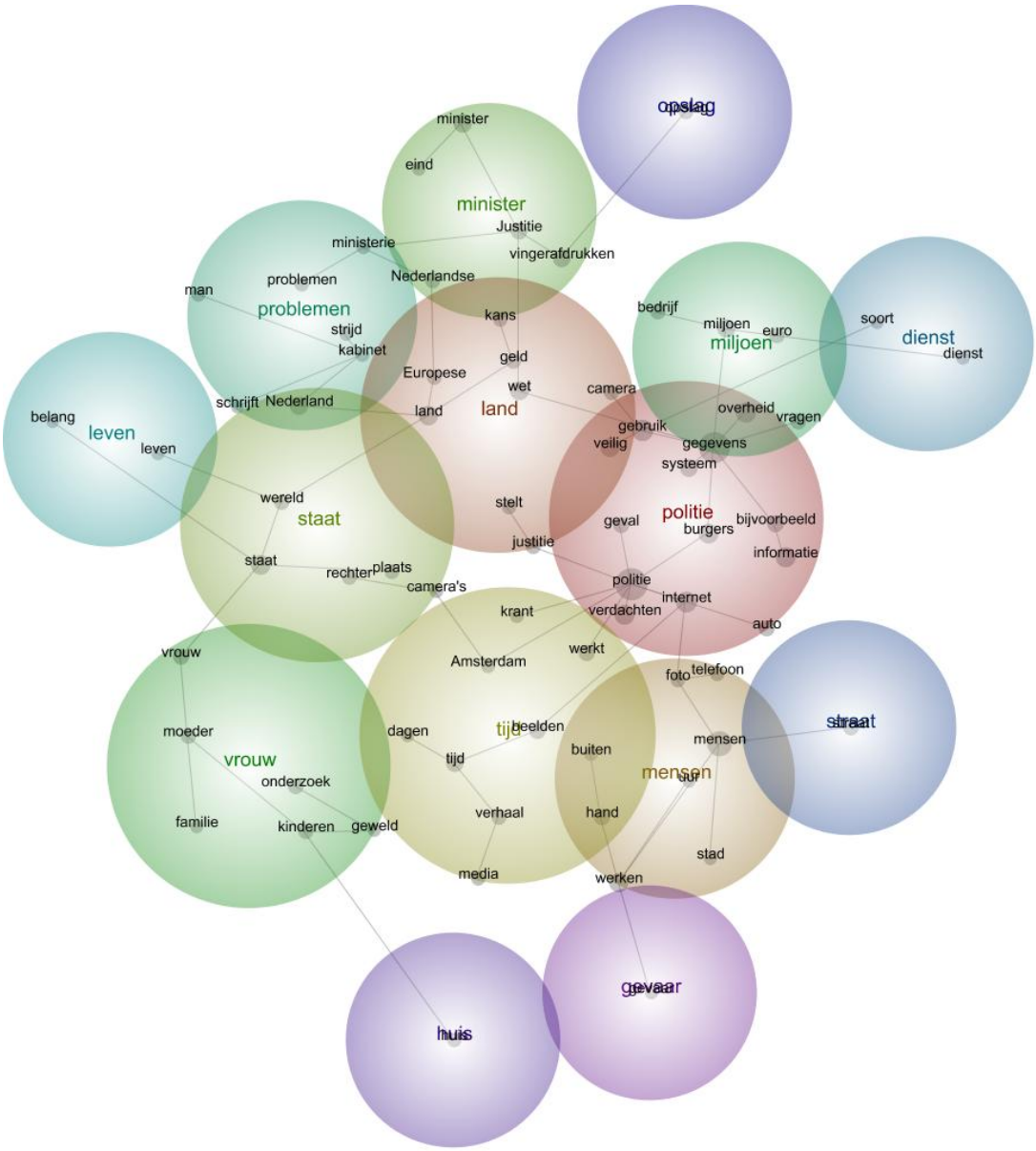

Figure 39: Concept map NL 2011 - Volkskrant, AD, Telegraaf, NOS

Theme	Connectivity	Relevance
politie	100%	
land	33%	
mensen	32%	
tijd	32%	
staat	26%	
minister	22%	
vrouw	20%	
miljoen	18%	
problemen	16%	
leven	05%	
dienst	04%	
straat	04%	
opslag	03%	
huis	03%	
gevaar	02%	

Figure 40: Theme connectivity list NL 2011 - Volkskrant, AD, Telegraaf, NOS

5.3 SUMMARISED FINDINGS AND HYPOTHESES

Exploring the sample in the above described way provides us with a variety of tentative findings that will be summarised and used for the development of tentative hypotheses in this section. First of all, we have shown that the coverage of privacy and security issues as represented by our sample differs in size in the primary countries. Looking only at the printed press, as the online media could not be extracted from the same database and thus the search strategy differed, the UK sample is significantly bigger than the German and Dutch one. Within the respective country's sample, the newspapers with a more centre-left stance (Süddeutsche Zeitung, The Guardian, De Volkskrant) show the highest amount of coverage in each country. Looking at the popular newspapers BILD, Daily Mail and De Telegraaf, it was shown that applying our search strategy to the German tabloid BILD did not deliver enough results, so it had to be excluded from the analysis. However, this was not the case for the British Daily Mail and the Dutch De Telegraaf. Taking into account BILD's focus on sensationalistic stories, it is likely that while the terms privacy and security are rarely used literally, another vocabulary is used which is expected to be more familiar to the newspaper's targeted audience, but that reporting about related issues still takes place.

Looking at the distribution of articles in the years of analysis (2008 – 2011), we also found that while the German reporting follows a clear pattern of a more or less same amount of articles in the years 2008 and 2011, with a visible low point in 2009 followed by a peak in 2010, the situation in the UK and the Netherlands is less uniform without a clearly identifiable pattern. Thus we reason that overall events in the area of privacy and security had higher influence on the German reporting than on the UK and Dutch one.

Second, the series of analyses using a data-mining based text analytical tool has shown that there is a set of shared topics that was found in all media analysed. This set of topics refers to data-related issues; that is informational security and privacy, data protection issues and generally topics related to the internet. Apart from this overall focus on data-related issues, it was shown that the reporting differs depending on the respective media's orientation. Whereas the popular press also largely covers home and family related issues (privacy and security in private life), the quality newspapers' reporting seems to be more diversified. Additionally, a focus on technology-related issues was detected in the German online source Spiegel Online, and also partly in the British BBC News and the Dutch NOS (again, as the search strategy was not exactly the same, these are not directly comparable). At country level, it was shown that reporting also reflects national relevant topics.

Drawing from these tentative findings, the next steps of our research will take place along the following hypotheses:

- The security of personal information as challenged by new technologies is the most important issue in reporting about privacy and security throughout the European media landscape.
- International events in the area of privacy and security have a high influence on the intensity of reporting.
- National events are also reflected in the coverage on privacy and security issues, but to a lesser extent.
- Developments and events in relation to international companies have a high influence on the European reporting on privacy and security issues.

- The reporting about internet-related issues increases every year, which is to a good deal due to the ever-wider use of social networks.
- Online media have a stronger focus on internet and technology related issues than the traditional newspapers.

5.4 LIMITATIONS

Some remarks must be made on limitations of the analyses conducted. First, every keyword-based search strategy implies the risk of not finding all relevant articles on the chosen context. In our context this means that there are probably more articles that may not literally contain the terms privacy and security, but that still deal with the issue implicitly. By mostly using databases that categorize articles, this risk was reduced to a certain extent, but it is not eliminated. Nevertheless, the exploration of our sample in the above described way has shown that the sample gained is highly relevant in our context.

Second, there are several limitations implied in the automatic content analysis. The disintegration of grammatical information and the reduction to frequency counts delivers no information on how the respective discourse is framed, that is, how the issues are presented. Also, we cannot learn much about frequently occurring actors, as they only appear occasionally. The same applies to genres: We cannot draw conclusion about in which genres the reporting on privacy and security issues takes place and how. Another limitation that derives from frequency counts is that themes that are only important for a short period of time or ones that are just emerging and therefore are not (yet) mentioned often enough in the sample will not be detected.

Furthermore, although the exploration of the underlying material to interpret the concept maps is theoretically as reproducible as the analysis, it still introduces a risk of researcher bias. And last, much exploration of the analysed material is needed for a useful interpretation, and there is still room to expand this. The software offers even more features and possibilities, which will need to be explored in the next weeks (see also next chapter).

5.5 NEXT STEPS

Overall, the outcomes of the series of analyses will now have to be prepared for the next steps within our work package; that is, among others, the development of categories for the code book and coding guidelines. Additionally and parallel to performing a similar series of analyses for the secondary countries, we will explore additional features and possibilities of analysis that the software offers. There is, for example, the possibility to manually "seed" concepts of interest, which might help to gain more comparable results for the respective media and countries. Also, one can conduct a sentiment analysis, which should provide insights into the presentation of the reporting in terms of negatively/positively/neutral. We will have to carefully consider if we want to make use of these or if we want to move directly forward to a manual content analysis with human coders.

As part of this, we will integrate the concept of framing. As described in chapter (3.1.3), frames are patterns of interpretation that the media offers to their readers, and that consist of a problem definition, a causal interpretation, a moral evaluation and a treatment recommendation. These elements will be divided into their parts and operationalised as variables that can be coded together with all other variables (topics, actors, arguments etc.)

during the coding process. As Matthes/Kohring have suggested, frames can then be identified via cluster analysis, which means that when some elements group together in a specific way, they form a pattern that probably can be identified across several texts in the sample. These patterns will reveal the frames applied in the media discourses.[71]

The third step in this WP involves the systematic, in-depth qualitative analysis of media discourse. We will focus on analysing key elements of our material, depending on the outcomes of the further series of analyses. We will also consider case studies.

The fourth step in our WP is the monitoring of our selected media during the field phase of the PRISMS survey. This will show if there are certain events that are discussed in the media during the survey and therefore may have influenced people's perceptions on privacy and security. This will be used to identify and interpret possible anomalies and artefacts in the survey data.

The outcomes of all tasks taken together will enable us to answer the following questions:

- Which topics are addressed in media reporting about privacy and security? Which features of media reporting can be identified? Attributes of analysis include intensity of reporting, news values, framing, norms and values, emotions, frequently used examples.
- How does the reporting of privacy and security issues evolve over time?
- Which actors are referred to?
- In which of the respective media the reporting about privacy and security takes place most frequently? Is there something like an opinion leader?
- Which genres are the most important for reporting of privacy and security issues?
- Which regions are covered in the media reporting of privacy and security issues? Are there white spots and where? Are there differences in the reporting (intensity, frequency etc.) if an issue is of local, regional, national or international importance?

[71] Entman, 1993; Matthes and Kohring, 2008.

6 SUMMARY

In this report we have provided an overview of the ongoing research on the media's coverage of privacy and security issues within the PRISMS project. Following our main research objectives – identifying important discourse patterns regarding privacy and security reappearing in the media and analysing how the notions of privacy and security are reconstructed by the media – we identified the central theoretical concepts that frame our research as well as studies in similar areas that make use of them. Those concepts include the theory of agenda setting, which refers to the idea that the emphasis that the mass media place on certain issues and the importance that the audience attributes to these issues are correlated and therefore forms the basis of the work package's final aim: To analyse how the notions of privacy and security as found in the media reporting are reflected in people's opinions.

To be able to achieve that goal we presented our research approach, which is based on a complex combination of qualitative and quantitative tasks as well as automated and manual aspects. After having introduced the methodology of choice, content analysis, we then moved on to the identification of our sample. We extracted our sample by using a keyword-based search strategy from different newspapers and also partly online media from six European countries from different geographical regions; namely Germany, the United Kingdom, the Netherlands, Italy, Denmark and Hungary. As a first step within our work package, we then provided insights into the process of analysing the European media landscape as represented in our sample by performing an automatic content analysis. While we regard this analysis as a starting point for the further systematic exploration of the material, if already offers interesting insights into the key features of our sample. As shown, a set of shared topics was detected throughout the different media, which is accompanied by issues that vary in between the different types of media and countries. Whereas for example the Daily Mail on the one hand focuses on home and family related issues, the Guardian on the other hand puts emphasis on government related issues. Also reporting reflects national relevant topics, such as the use of CCTV in the UK and the introduction of security scanners at Amsterdam Airport Schiphol in the Netherlands. The outcomes of the series of analyses will now have to be prepared according to be able to be used for the next steps within our work package.

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APPENDIX: SELECTED MEDIA

Medium	Circulation	Published by/ Publishing group	Address
Germany	**Source: IVW; Q4 2011**		
Frankfurter Allgemeine Zeitung	457.892	Werner D'Inka, Berthold Kohler, Günther Nonnenmacher, Frank Schirrmacher, Holger Steltzner FAZIT-Stiftung Gemeinnützige Verlagsgesellschaft mbH	Frankfurter Allgemeine Zeitung GmbH Hellerhofstraße 2-4 60327 Frankfurt am Main Germany
Süddeutsche Zeitung	535.567	Dr. Johannes Friedmann (chair); Albert Esslinger-Kiefer, Dr. Thomas Schaub, Dr. Christoph Schwingenstein Süddeutscher Verlag, München	Süddeutscher Verlag Hultschiner Str. 8 81677 München Germany
BILD	3.474.085	Axel Springer AG, Berlin	BILD digital GmbH & CO. KG Axel-Springer-Straße 65 10969 Berlin Germany
Spiegel Online		SPIEGELnet GmbH	SPIEGEL ONLINE GmbH Ericusspitze 1 20457 Hamburg Germany
United Kingdom	**Source: ABC; July 2011**		
The Guardian	248.775	Guardian News & Media Ltd	Kings Place, 90 York Way London N1 9GU United Kingdom
The Daily Mail	1.930.260	Martin Clarke	Associated Newspapers Limited Northcliffe House 2 Derry Street London W8 5TT United Kingdom

Medium	Circulation	Published by/ Publishing group	Address
The Daily Telegraph	634.113	Tony Gallagher Telegraph Media Group Hollinger International	111 Buckingham Palace Road, London, SW1W 0DT United Kingdom
BBC		British Broadcasting Company	BBC Broadcasting House Portland Place London W1A 1AA United Kingdom
The Netherlands	**Source: HOI; average 2011**		
De Volkskrant	236.463	De Persgroep Nederland Frits Campagne	De Volkskrant INIT-gebouw Jacob Bontiusplaats 9 1018 LL Amsterdam The Netherlands Postal address: De Volkskrant Postbus 1002 1000 BA Amsterdam The Netherlands
Algemeen Dagblad	392.617	Joint Venture von De Nederlandse Persgroep und Wegener	AD Centrale Redactie Delftseplein 27-K Postbus 8983 3013AA AA Rotterdam The Netherlands
De Telegraaf	544.448	N.V. Holdingmaatschappij De Telegraaf Telegraaf Media Groep	Basisweg 30 1043 AP Amsterdam Postal address: Postbus 376 1000 EB Amsterdam The Netherlands

Medium	Circulation	Published by/ Publishing group	Address
NOS		Nederlandse Omroep Stichting	Media Park Sumatralaan 45 1217 GP Hilversum The Netherlands Postal address: NOS: Nederlandse Omroep Stichting T.a.v. Publieksvoorlichting Postbus 26600 1202 JT Hilversum The Netherlands
Denmark	**Source: DO; average 2011**		
Morgenavisen Jyllands-Posten	104.019	JP/ Politikens Hus A/S	Jyllands-Posten Grøndalsvej 3 8260 Viby J Denmark
Politiken	98.356	JP/ Politikens Hus A/S	Dagbladet Politiken Rådhuspladsen 37 1785 Kbh. V. Denmark
Ekstra Bladet	66.341	JP/ Politikens Hus A/S	Ekstra Bladet Rådhuspladsen 37 1785 København V Denmark
Hungary	**Source: MATESZ; H1 2011**		
Népszabadság	78.501	Károly T. Vörös Népszabadság Zrt	Népszabadság 1591 Budapest Pf. 333 Magyarország

Medium	Circulation	Published by/ Publishing group	Address
Magyar Nemzet	61.709	Kovács András Lippai Roland	MNO Üllői út 102 1089 Budapest Hungary
Blikk	243.638	Ringier Publishing Ltd Komáromi Gergely (editor)	RINGIER KIADÓ KFT. Cím: 1082 Budapest Futó utca 35-37 Hungary
Italy	**Source: ADS; H1 2010**		
Corriere della sera	489.774	Rizzoli Corriere della Sera (RCS MediaGroup)	RCS MediaGroup S.p.A. Divisione Quotidiani Sede legale: via Angelo Rizzoli, 8 20132 Milano Italy
La Repubblica	449.150	Gruppo editoriale L'Espresso SpA	Gruppo Editoriale L'Espresso Spa Sede sociale Via Cristoforo Colombo n. 98 00147 Roma Italy