

# Media discourses about Europe's "Migration Crisis": comparing online and print media in Germany

Christian Czymara, Goethe University Frankfurt  
 Marijn van Klingeren, Radboud Universiteit Nijmegen

## Background

Europe recently experienced a sharp increase in asylum rates. The most popular destination country was Germany, which led to solidarity and a "welcoming culture" among natives, but also fundamental protest and xenophobic violence. These developments were rather unpredictable and unprecedented, which gave mass media a key role in informing the general public. With the increasing popularity of online news and sinking readership of print media, it is important to know whether and how the reporting between these two kinds of media differ.

## Research questions

- Which frames dominated the refugee discourse in German mass media?
- How did media reporting develop in the course of the "Crisis"?
- Do online and print media differ in their frame usage?

## Data

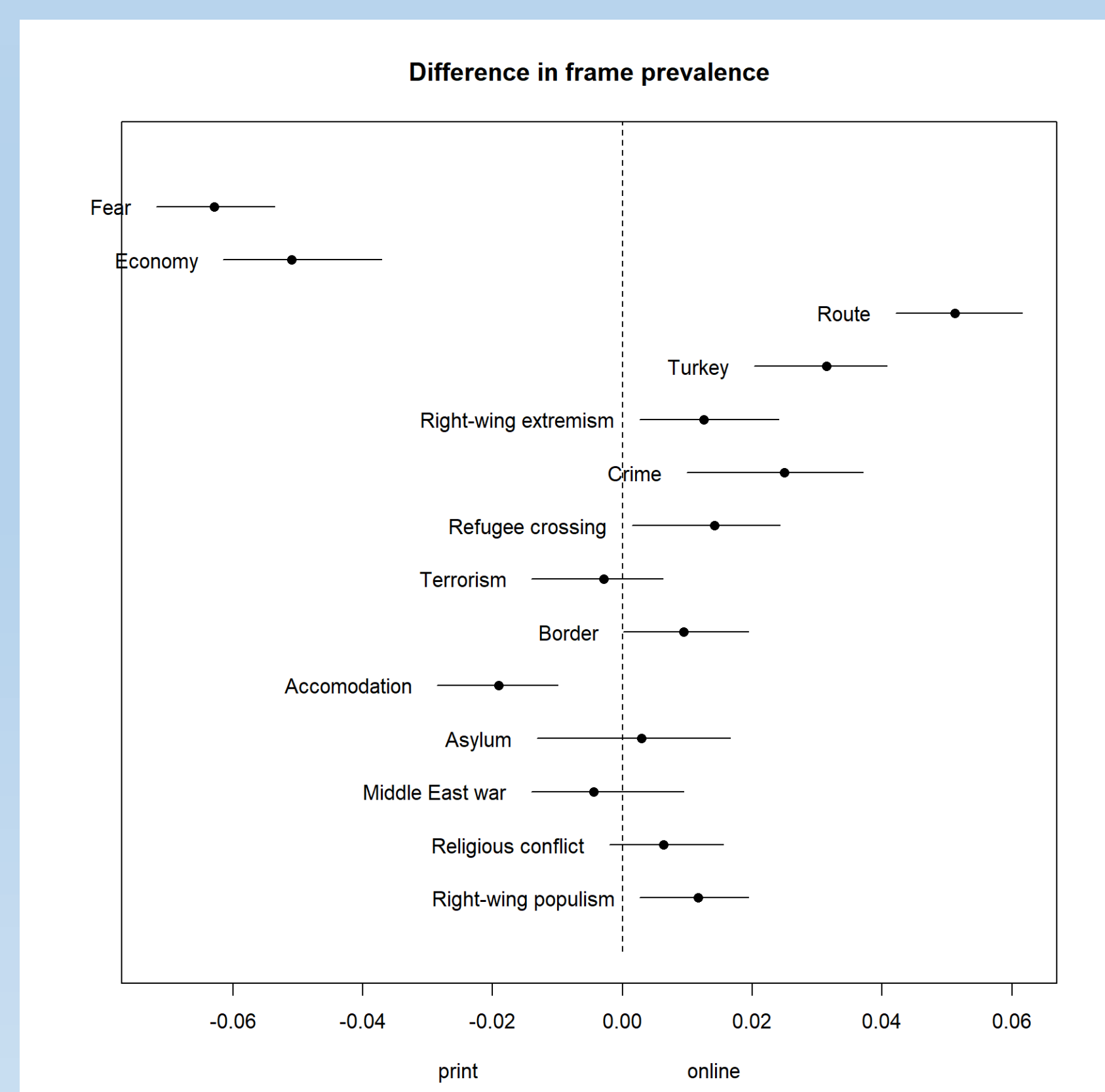
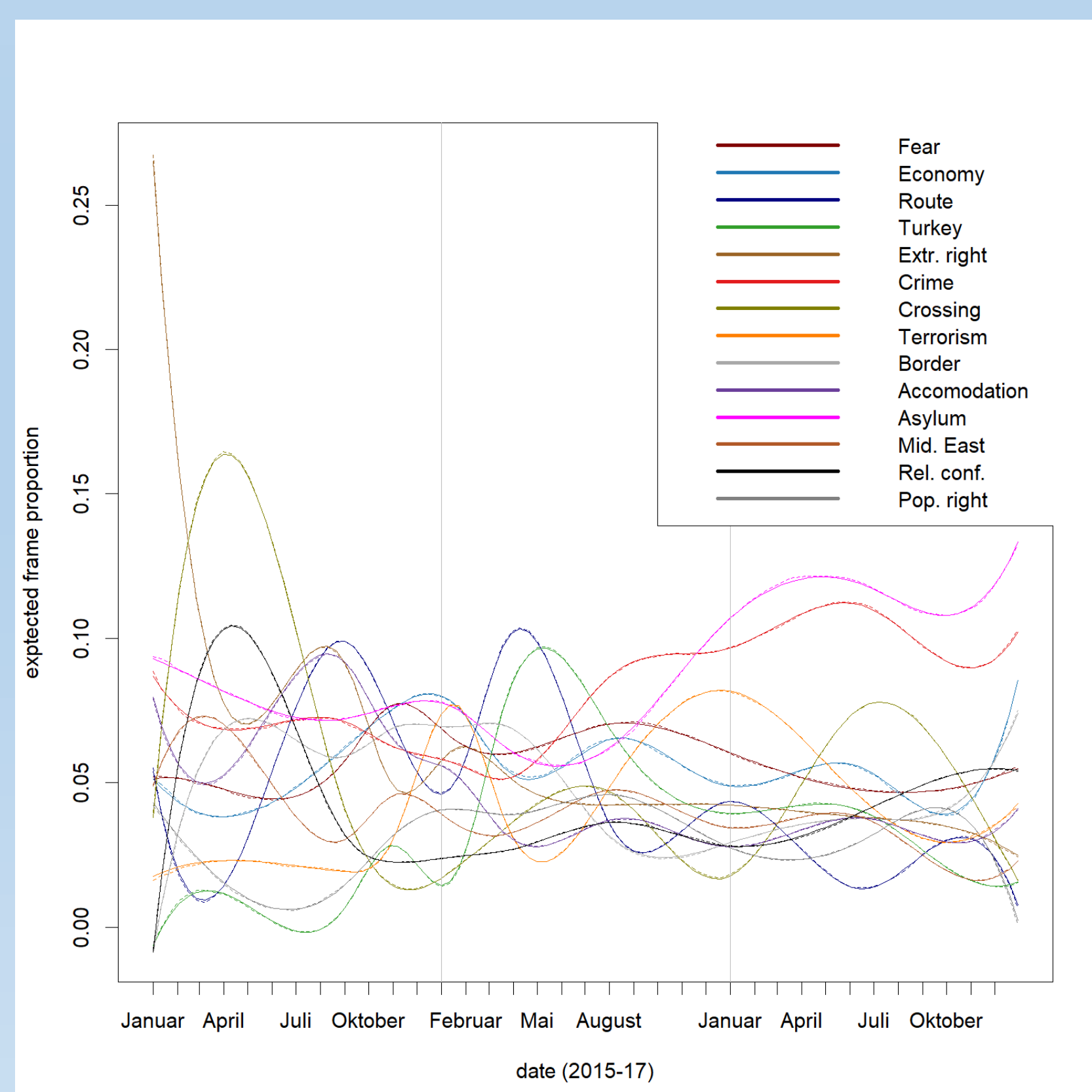
Online and print versions of three quality news outlets: *Die Welt*, *Die Zeit*, *Der Spiegel*. Relevant are all articles mentioning at least twice terms related to refugees or asylum between 1 January 2015 to 31 December 2017. The initial dataset consists of 32,597 articles collected through LexisNexis.

## Method

Structural Topic Modeling (STM) to identify the 20 dominant word clusters in data without a priori restrictions, focus on 14 relevant topics.

## Results

Fear	Economy	route	Turkey	Right-wing extremism	Crime	Refugee crossing
gesellschaft	milliard	griechisch	turkei	pegida	polizei	mittelme
angst	wirtschaft	griechenland	turkisch	facebook	jahrig	itali
burg	arbeit	migrant	erdogan	dresd	ermittl	liby
demokrati	integration	polizei	ankara	sachs	verletzt	boot
kris	hoh	mazedoni	präsident	rechtsextrem	staatsanwaltschaft	migrant
problem	unternehmen	behord	turk	rassist	verdacht	italien
schaff	arbeitsmarkt	tausend	abkomm	demonstration	mutmass	schiff
Terrorism	Border	Accommodation	Asylum	Middle-East war	Religious conflict	Right-wing populism
anschlag	griechenland	stadt	abschieb	syri	muslim	afd
koln	kommission	kommun	asylantrag	is	kind	umfrag
polizei	brussel	unterkunft	bamf	syrisch	kirch	befragt
straftat	gipfel	wohnung	asyl	kampf	un	wahl
behord	pol	hamburg	maizièr	islam	international	petry
übergrieff	aussengrenz	helf	abgelehnt	al	afrika	mehrheit
islamist	gemeinsam	unterbring	bundesregier	irak	flucht	gauland



## Wir setzen unseren Schwerpunkt auf Data Science & Web Development



### Coding Club

- Coding-Kenntnisse in den Programmen **Data Science** und **Web Development**
- Für Studierende **jeglicher** Fachrichtung ganz unabhängig vom Kenntnisstand
- Die erworbenen Fähigkeiten werden in **Projekten** angewendet
- Unterstützung durch erfahrene **Mentoren** bei fachlichen Fragen



## Unsere Teilnehmer werden strukturiert durch ihr erstes Data Science Projekt geleitet

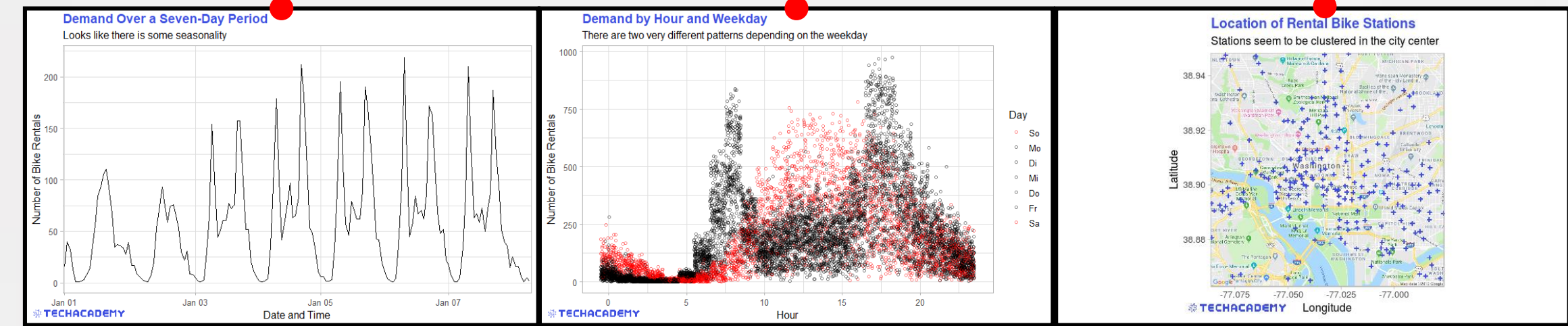
1

### Explorative Datenanalyse – Lerne den Datensatz kennen

1. Plot des Ausleihverhaltens über die Zeit
2. Ausleihverhalten nach Wochentag
3. Wie lange werden die Räder ausgeliehen?
4. Mergen & Karten zeichnen

```
datetime,season,holiday,workingday,weather,temp,atemp,humidity,windspeed,casual,registered,count
2011-01-01 00:00:00,1,0,0,1,9,84,14,395,81,0,1,1,1,62011-01-01
01:00:00,1,0,0,1,9,84,14,395,75,0,3,10,132011-01-01 02:00:00,1,0,0,1,9,02,13,635,80,5,27,322011-01-01
03:00:00,1,0,0,1,9,84,14,395,75,0,3,10,132011-01-01 04:00:00,1,0,0,1,9,84,14,395,75,0,3,10,132011-01-01
05:00:00,1,0,0,1,9,84,14,395,75,0,3,10,132011-01-01 06:00:00,1,0,0,1,9,02,13,635,80,5,27,322011-01-01
07:00:00,1,0,0,1,8,2,12,88,86,0,1,2,32011-01-01 08:00:00,1,0,0,1,9,84,14,395,75,0,1,7,82011-01-01
09:00:00,1,0,0,1,13,12,17,425,76,0,8,6,142011-01-01
10:00:00,1,0,0,1,15,58,59,695,76,16,9979,12,24,362011-01-01
11:00:00,1,0,0,1,14,76,16,665,81,19,0012,26,30,562011-01-01
12:00:00,1,0,0,1,17,22,21,21,77,19,0012,29,55,842011-01-01
13:00:00,1,0,0,2,18,86,22,725,72,19,9995,47,942011-01-01
14:00:00,1,0,0,2,18,86,22,725,72,19,0012,35,71,1062011-01-01
15:00:00,1,0,0,2,18,04,21,97,77,19,9995,40,70,1102011-01-01
```

Anfänger + Fortgeschrittene

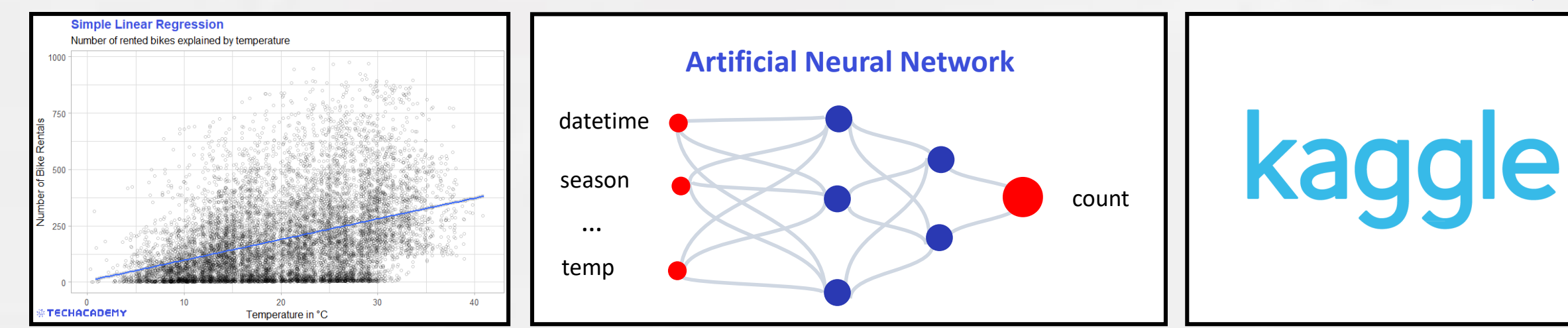
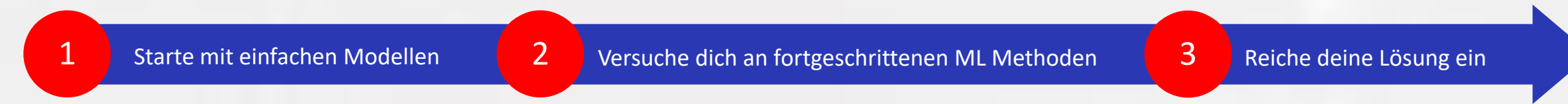


2

### Nachfrage-Prognose – Wende statistische Methoden an

1. Untersuche den Zusammenhang zwischen den Variablen näher
2. Teste verschiedene Modelle und deren Qualität
3. Von Training zu Testen – Treffe Vorhersagen
4. Lade den Datensatz auf Kaggle hoch

Fortgeschrittene + ambitionierte Anfänger



## TechAcademy besteht aus einem ehrenamtlich engagierten und interdisziplinären Team



- |  |   |  |
|--|---|--|
| <br>Natnael Fekade<br>Co-Founder   M.Sc. BWL                 | <br>Joel Teclé<br>Co-Founder   B.Sc. Informatik                   | <br>Georgios Brussas<br>Co-Founder   M.Sc. Wirtschaftsinformatik |
| <br>Lukas Jürgensmeier<br>Operations   M.Sc. BWL             | <br>Isabell Ristau<br>Marketing   B.Sc. Wirtschaftswissenschaften | <br>Jonathan Ratschat<br>Product Development   M.Sc. BWL         |
| <br>Paul Stephan<br>Sales   B.Sc. Wirtschaftswissenschaften  | <br>Victoria Spitz<br>HR   B.Sc. Wirtschaftswissenschaften        | <br>Tilla Kuch<br>Operations   B.A. Humangeographie              |
| <br>Benjamin Lucht<br>Product Development   B.Sc. Mathematik | <br>Dominik Helm<br>Finance   B.Sc. Wirtschaftswissenschaften     |  |

## Starke Vernetzung zur Universität und Praxis – Unsere Partner und Advisor

- |   |   |
|---|---|
| <br>Prof. Dr. Bernd Skiera<br>Lehrstuhl E-Commerce   Goethe Universität | <br>Matthias Schirrmacher<br>Interne Digitalisierung   Merck KGaA |
| <br>David Middelbeck<br>Head of Product   Westphalia DataLab            | <br>Niclas Lindemann<br>Head of Initiative   Accelerate@HHL       |
- Partners: main INCUBATOR, DB Systel GmbH, ING, ginmon, BearingPoint®

# Data Science in der Marketinglehre

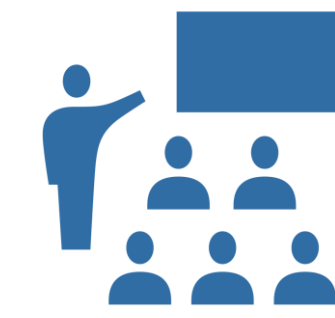
Prof. Dr. Bernd Skiera, Hon.-Prof. Dr. Martin Schmidberger, Gabriela Alves Werb



**Machine Learning:  
Praxis- und forschungsorientierte  
Anwendungen**



## Lehrveranstaltungen



### **PhD und Quantitative Master of Science (in Marketing) (Skiera/Alves Werb)**

- Analytics in Customer Value Management (jedes WS)
- Advanced Topics in Marketing 5: Small and Big Data Analysis (WS15/16, WS16/17, WS17/18)
- Advanced Topics in Marketing 5: Machine Learning (WS18/19)

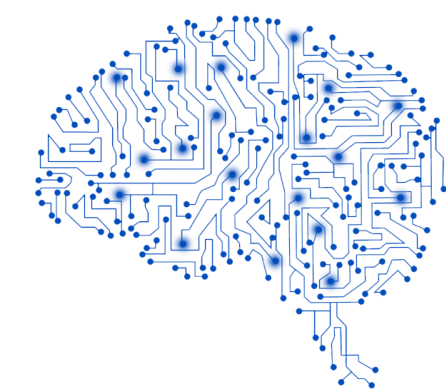
### **Master (Schmidberger/Alves Werb)**

- Datenbasierte Analyse von Kundenverhalten (SS17, SS18)
- Data Mining in Marketing: Data Driven Customer Analytics with Machine Learning (SS19)

### **Bachelor (Schmidberger/Blaseg/Laub)**

- Empirische Kundendatenanalyse: Eine praxisorientierte Einführung (jedes WS)

## Inhalt



- Einführung in innovative Verfahren zur Daten-Erhebung („Webscraping“)
- Sichtung und Analyse großer Datensätze
- Umgang mit unstrukturierten Daten („Text Mining“)
- Diskussion und Beurteilung neuester Entwicklungen im „Machine Learning“
- Praktische Anwendung von „Machine Learning“ Algorithmen anhand empirischer Datensätze
- Methoden zur Modellvalidierung

## Daten



- Kundendaten der ING-DiBa
- Öffentlich verfügbare Datensätze (z.B. „Data Mining Cups“)
- Forschungsdatensätze der Studierende
- Fallstudien mit Datensätzen (z.B. von Darden und Harvard Business School)

# MODELING 23 YEARS OF NEWS TOPICS ON PARENTHOOD

Alexandra Ils

Goethe University Frankfurt, Sociology Institute

ils@soz.uni-frankfurt.de

## Background

- Parental action today is considered to have a determining impact on a child's future happiness, healthiness, and success in life and, therefore, for the future society (Lee, 2014)
- Shifts in parenthood ideology emerge as product of cultural developments on an institutional level (Lee, 2014)
- Former research focuses on the role of welfare states and various institutions to explain this change, but media as distributor of norms has been overlooked
- Media as one institution where parents can derive ideas and ideals on the behaviour of parents and what parenthood entails (Francis-Connolly 2003)
- But: only little is known about which specific ideologies of motherhood, fatherhood, parenthood are communicated or even desired by mainstream news media (Budds, Locke, & Burr 2013; Thiessen & Villa, 2009)
- An overview over the discourse is completely missing

## Motivation

### Research Question:

- Which topics are addressed by German newspaper outlets when covering mothers, fathers and/or parents?
- How does the distribution of topics change over time for topics strongly related to the topic of parenthood?
- What is the proportion of mothers, fathers and parents within topics strongly related to parenthood?

### German case:

- Archetype of a conservative welfare state (Esping-Andersen, 2013)
  - Reunification 1990: conservative and socialist ideals clash
  - Variety of policies preserves traditional family model in which fathers are expected to be breadwinners and mothers are presumed to be carers
  - Paradigmatic shift in family policy in 2007: 'Federal Parental Allowance and Parental Leave Law' ('BEEG')
- Fathers: financial providers, but also carers  
→ Mothers: carers, but also active on the labour market

### Former research on parents in newspaper media:

- Most often news accounts of 'deviant' parents
  - Normative family ideals from readers' letters, news-stories on stay-at-home-dads or attachment parenting, historic newspaper articles and depiction of politicians
- Good starting point, but:
- Very specific research questions on limited sample, lack of comparability, no longitudinal studies
  - Systematic overview on general coverage on parenthood and the topics discussed in newspaper media is missing in the (sociological) literature so far

## First Results

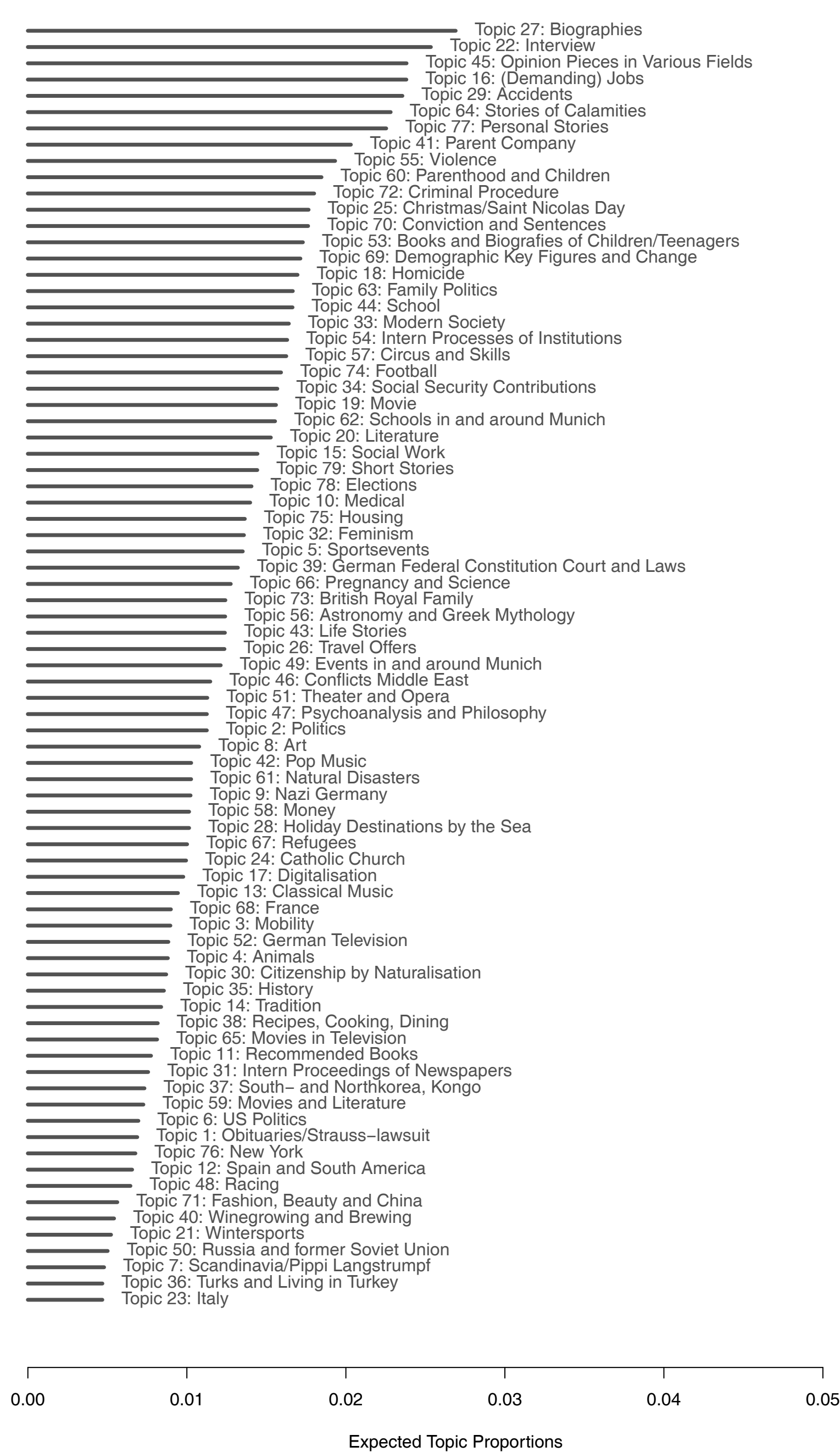


Figure 1: Summary of topic proportions

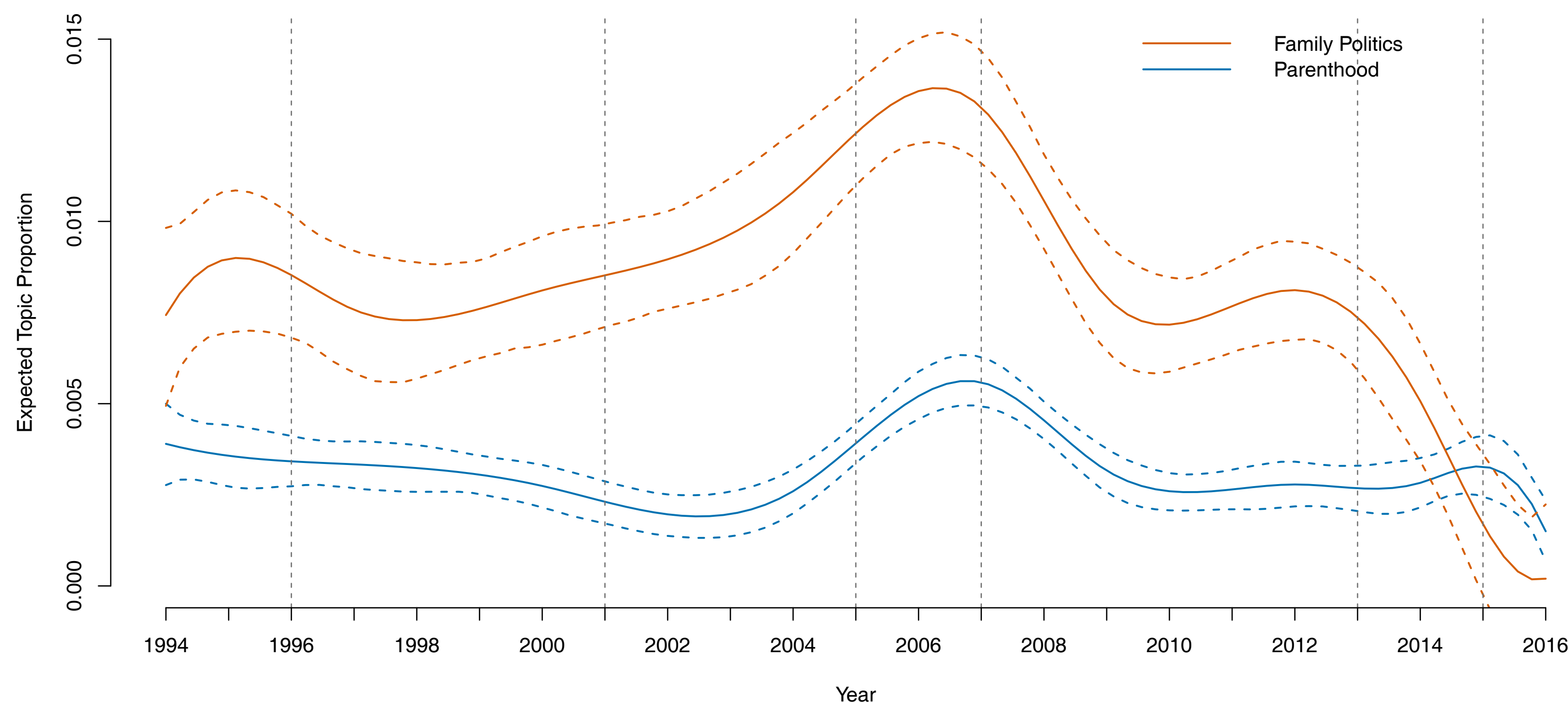
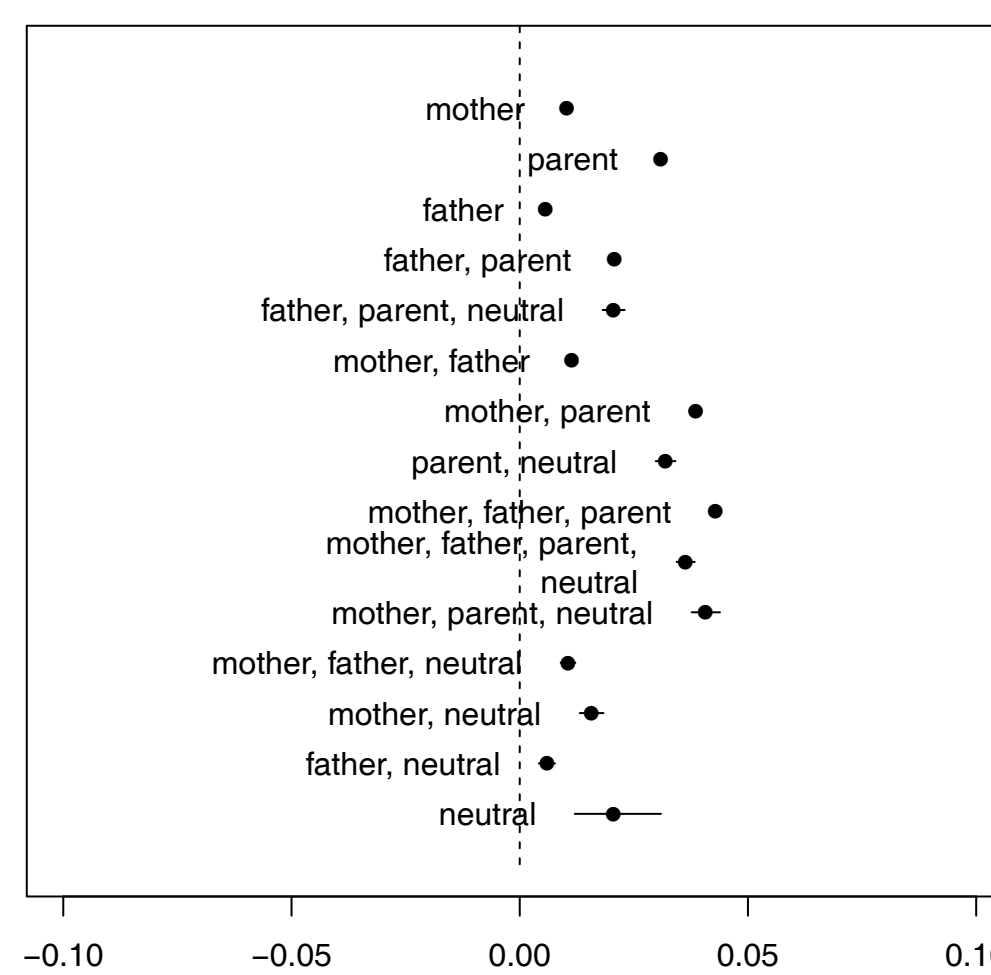


Figure 2: Topic prevalence evolution of 'Family Politics' and 'Parenthood' over years

### Effect of Gender in Topic 'Parenthood'



### Effect of Gender in Topic 'Family Politics'

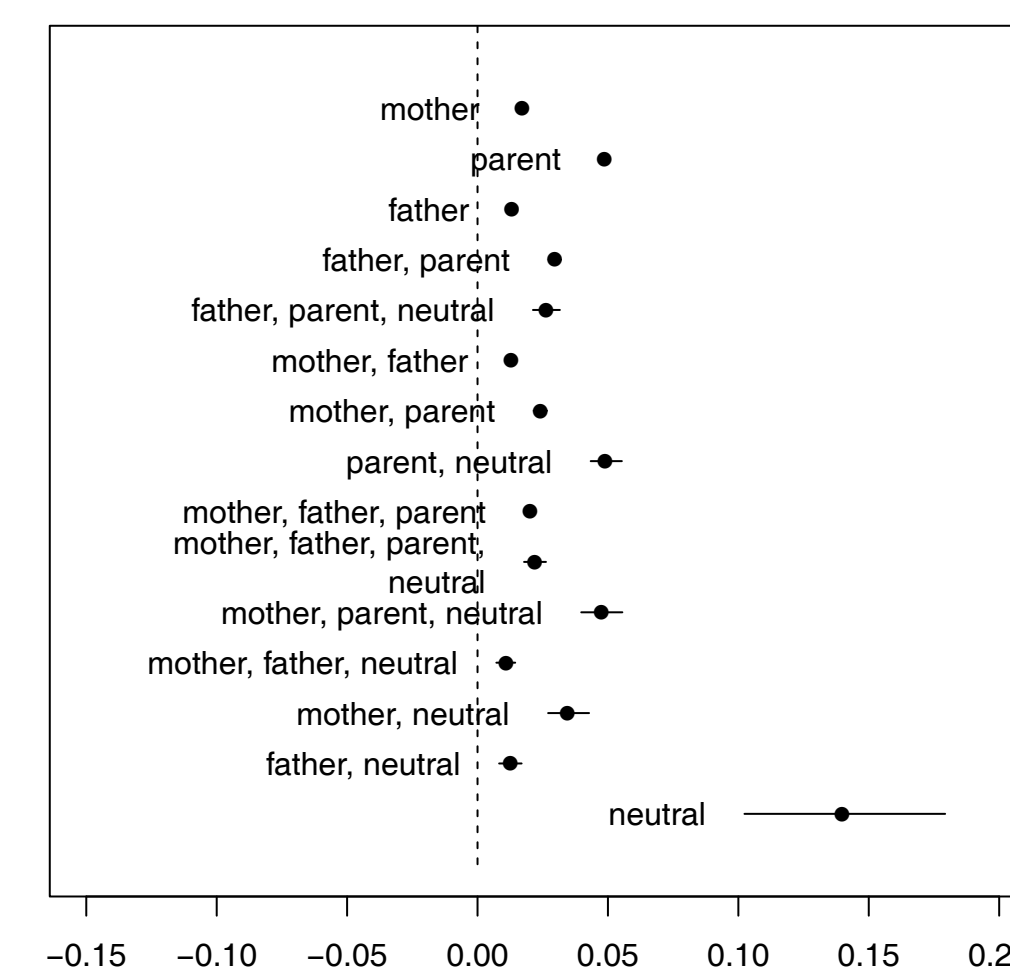


Figure 3: Expected document proportion for topics 'Family Politics' and 'Parenthood'

## Data & Methods

### Sample:

- Articles from 'Süddeutsche Zeitung' (leftist editorial stance) obtained from LexisNexis
- 164.618 cleaned articles from 1994-2016 in database

### Analysis:

- Structural Topic Model with  $k = 79$  topics from stm-package (Roberts et al., Forthcoming)
- Parameters:
  - Mentioned gender in articles: mother and/or father and/or parent and/or neutral
  - Year of publication of the article
  - Chosen topics to scrutinize further: 'Family Politics' and 'Parenthood'

## Conclusion

### RQ 1:

- On average, an article devotes around 1.9% of its space to the topic 'Parenthood and Children'
- Mentions of mother, father and/or parents are broad and often times just once in the whole article
- Sample not only consists of articles that specifically talk about parenthood, but parents are mentioned more often in a *laissez-faire* way in articles on different topics

### RQ 2:

- 'Family Policy': high points around 1995, 2006, 2012, just before important changes of family policies are implemented --> Discussion in articles starts prior changes in law
- 'Parenthood': high point in 2006, shortly before the 'BEEG' is introduced --> On average 0.6% of space in an article is dedicated to parenthood-topics

### RQ 3:

- 'Family Politics': articles using the words parent, parent & neutral, mother & parent & neutral dedicate around 5% on average of content to this topic
- 'Parenthood': articles using the words mother & father & parent, mother & parent, mother & parent & neutral dedicate around 4% on average of content to this topic

## References

- Budds, K., Locke, A., & Burr, V. (2013). 'Risky Business': Constructing the "choice" to "delay" motherhood in the British press. *Feminist Media Studies*, 13(1), 132-147. <https://doi.org/10.1080/14680777.2012.678073>
- Esping-Andersen, G. (2013). *The Three Worlds of Welfare Capitalism*. Online Publication: John Wiley and Sons, Inc.
- Francis-Connolly, E. (2003). *Constructing Parenthood: Portrayals of Motherhood and Fatherhood in Popular American Magazines*. *Journal of the Motherhood Initiative for Research and Community Involvement*, 5(1), 179-185.
- Lee, E. (2014). Introduction. In E. Lee, J. Bristol, C. Faircloth, & J. Macvarish (Eds.), *Parenting Culture Studies* (pp. 1-24). Basingstoke: Palgrave Macmillan.
- Roberts, E., Margaret, Stewart, Brandon M., & Tingley, D. (Forthcoming). stm: R Package for Structural Topic Models. *Journal of Statistical Software*. Advance online publication. <https://doi.org/10.18637/jss.v000.i00>
- Thiessen, B., & Villa, P.-L. (2009). Mütter und Väter: Diskurse - Medien - Praxen. Eine Einleitung. In P.-L. Villa (Ed.), *Forum Frauen- und Geschlechterforschung*. Vol. 24. Mütter - Väter: Diskurse, Medien, Praxen (pp. 7-25). Münster: Verl. Westfälisches Dampfboot.



Acknowledgment  
This research has partly been funded by the ERC through an ERC Starting Grant under the European Union's Seventh Framework Programme (FP7/2007-2013)/Agreement no.: 263651)