

Article

## Self-Inflicted Deprivation? Quality-as-Sent and Quality-as-Received in German News Media

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### Abstract

Both the news media and citizens have been blamed for citizens' lack of political sophistication. Citizens' information source choices can certainly contribute to suboptimal results of opinion formation when citizens' media menus feature few, redundant, or poor-quality outlets. How strongly news consumers' choices affect the quality of information they receive has rarely been investigated, however. The study uses a novel method investigating how content-as-sent translates into content-as-received that is applicable to high-choice information environments. It explores quality-as-sent and quality-as-received in a content analysis that is combined with survey data on news use. This study focuses on 'selection quality' measured in terms of scope and balance of subtopic units, information units, and protagonist statements sent/received. Regarding *quality-as-sent*, the scope of news proves to be lowest in TV news and substantially greater for online news and newspapers; imbalance of coverage varies only moderately between outlets. As for *quality-as-received*, the scope citizens received was only a small fraction of what the news outlets provided in combination or what the highest-quality news outlet provided, but was close to what one average news outlet provided. There was substantial stratification in the extent to which news coverage quality materializes at the recipient level. Scope-as-received grew mainly with using more news, relatively independent of which specific news outlets were used. Imbalance-as-received, however, was a function of the use of specific outlet types and specific outlets rather than the general extent of news use. Using additional news media improved the quality-as-received, invalidating the notion that different news outlets merely provide "more of the same."

### Keywords

news bias; news diversity; news journalism; news performance; news quality; news use; online news

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### 1. Introduction

"Enlightened understanding" (Dahl, 1991) is regarded a prerequisite for democracy to work. It means that citizens need to be aware of current political issues, their various facets, the policy alternatives on the table, the reasoning behind them, their possible/likely consequences, and the goals the discourse protagonists pursue. Only thereby can they assess which policy proposals better fit their own interests or the interests of the social group/category they identify with (Dahl, 1991).

Is the bottle half-full or half-empty? It is common sense among political communication scholars that the

overall outcomes of opinion formation in democracies could be better—the bottle is certainly not spilling over (Neuman, 1986). Additionally, the stratification of uninformedness (Barabas & Jerit, 2009) along socioeconomic cleavages can go so far that even economically disadvantaged parts of the population oppose redistributive policies (Berinsky, 2002). Even though democracies appear to be relatively resilient against uninformedness of their citizens (Lupia, 1994) and democratic ideals are highly demanding (Zaller, 2003), citizens' motivation for opinion formation can be high and outcomes can be satisfying, under specific conditions, even in socioeconomically disadvantaged strata (Fishkin & Luskin, 2005). Levels and

stratification of political informedness can change, and the factors that influence them can be analyzed.

This study tries to develop and showcase a methodology that can help us analyze where the problem originates and where improvements could start. Scholars have put great effort into (a) analyzing citizen-related factors contributing to uninformedness (Neuman, 1986) and (b) mapping the weaknesses of news coverage (Patterson, 1993). Relatively little effort has been made to look at the link between the two: To what extent does the content the news media provide actually reach citizens—and what part of the picture the media offer is lost in transition? How stratified is this transitional loss between average citizens, the best-informed and the least-informed strata of society? In other words, to what extent is the lack of exposure to political information the consequence of individual media use choices (and thereby an instance of ‘self-deprivation’)? How much does it lag behind the information provided by the news media taken together, and how does it compare to the information a typical news outlet provides?

This article’s primary contribution is to develop a methodology and a paradigm for conducting analyses of how news quality as-sent translates into news quality as-received, and demonstrate its usefulness in a case study set in Germany. This helps assess the extent to which patterns of media use interfere with news performance, and which media contribute to improving or to lowering news performance.

## 2. Selection Performance for Subtopics, Information and Protagonist Statements

A vast number of dimensions, criteria and indicators for news performance have been developed (e.g., McQuail, 1992; Schatz & Schulz, 1992). This involves criteria such as truth, comprehensibility, or relevance, some of them ‘ephemeral’ criteria. This study focuses on selection performance/quality, which relates to the widespread criticism by sources and protagonists that the selection and weighting of issues, information or protagonists is inadequate (e.g., Kepplinger & Glaab, 2007; Maier, 2005). In the same vein, audience’s trust in the way news media select issues and information are central dimensions of media trust (Kohring & Matthes, 2007). In addition to covering a broad array of criticisms of news performance, studying selection performance allows a coherent operationalization and the construction of ecologically valid benchmarks (see Section 3).

Criticism of the media’s selection performance can concern (a) the *volume* of news coverage or news exposure, attesting inadequate (either too small or too large) amounts (Ricchiardi, 2008). Criticism can also concern (b) the *scope* of information and perspectives that are being covered in the media or that citizens are exposed to (Entman, 2004). The concept of ‘scope’ is closely related to the concept of ‘information diversity’. Diversity measures jointly measure (1) what share of a set of mes-

sages is sent or received and (2) how well the distributions of the frequencies of the messages sent or received match an equal distribution (Humprecht & Büchel, 2013). In contrast, this study’s analysis of *scope* focuses only on what share of the available information is sent/received at least once, neglecting the equality of the frequency distribution. That means it will not consider it a quality deficit if some information is provided multiple times while another is provided only once. Only information that is completely absent constitutes an information ‘gap’ indicating lower ‘scope’. Finally, criticism can focus on (3) partisan *imbalance*, asking which information and which perspectives are selected, and to what extent one of the sides in the conflict is systematically advantaged or disadvantaged (Entman, 2004; Kepplinger, Brosius, & Staab, 1991).

Consequently, this analysis of ‘selection quality’ will assess the *volume*, *scope*, and *partisan imbalance* of subtopic units (SUs), information units (IUs) and protagonist statements (PSs) covered by the media and which the recipients were exposed to. A good overview of SUs provides a comprehensive impression of an issue’s various aspects and narratives. A good overview of IUs provides the essential facts and arguments needed to evaluate the different policy alternatives. A good overview of PSs allows mapping the essential participants in the debates, which positions and arguments they endorse, and which interests and groups they represent or ally with. Together, these components provide a basis for “enlightened understanding” (Dahl, 1991; see also Geiß, 2015). Even the (im)balance of coverage can be analyzed from a selection quality perspective. I assign an ‘instrumentality tag’ (instrumental for side A: –1; instrumental for side B: +1; similarly instrumental for any side: 0) to each SU, IU and PS and weight each unit by its tag.

The performance of news content sent and the quality of news content received have rarely been studied in conjunction, despite widespread calls to do so (Helberger, Karppinen, & D’Acunto, 2018; McQuail, 1992; Napoli, 2011; van Cuilenburg & van der Wurff, 2007). The few pioneering studies that exist have not matched content data and survey data in a way that allows a direct comparison of content-as-sent (content analysis data) and content-as-received (survey data); they either asked specifically designed survey questions to assess perceived content-as-received characteristics (van der Wurff, 2011) or calculated diversity based on program/channel/outlet diversity rather than looking at the specific diversity of the content received (Dahlstrom & Scheufele, 2010). This study extends exposure diversity designs by assessing how citizens’ habits of media use affect the degree to which the full quality the news media provide is utilized.

## 3. Standards for Evaluating News Quality-as-Received

Assessments of news quality necessitate a benchmark or standard to measure the performance of news against.

Commonly used standards include: absolute standards (e.g., Humprecht & Büchel, 2013), extra-media standards (Schönhagen & Brosius, 2004), and intra-media standards (e.g., Kepplinger, 1985). Absolute standards define an optimal value/target value that a quality criterion should approach, such as ‘perfect balance’ of evaluative statements (target value: 0) or ‘maximum diversity’ (target value: infinity). Such standards have been criticized because perfect balance may be artificial (Boykoff & Boykoff, 2004) or because extreme diversity would overstrain attention and processing capacities of users (van Cuilenburg, 1998). Extra-media standards define a target value through media-independent data, like crime statistics time series. For instance, time series of the ‘true prevalence’ (target value) of murder cases and murder reports in the news should match. Complete proportionality is, however, only desirable to some extent and the value of such analyses is not universal (Rosengren, 1970). Intra-media standards define particular media or sets of media as benchmarks (e.g., highly reputed newspapers, target value) that other media should match as closely as possible.

In the current study, the information the news media supply (news-as-sent) serves as a standard to compare citizens’ estimated news exposure (news-as-received) with. This is a specific form of intra-media standard which is suited to test to what extent recipients make use of the news quality the news media provide. It defines the subtopics, information and protagonist mentioned in all relevant media taken together as the ‘relevant set’. Within this set, quality is viewed as greater if a larger share of the relevant set of subtopics, information and protagonists is covered (scope) and their valence/instrumentality is more balanced regarding the main conflict cleavage.

#### 4. Hypotheses and Research Questions

This study will explore: (1) the quality of news-as-received among a regional sample of German citizens and (2) the quality of news-as-sent by German news media popular among that sample (see Section 5.1 for details). The goal is to systematically compare selection quality in news-as-sent and news-as-received, and assess which mechanisms and which factors contribute to a higher or lower quality of news-as-received. In particular, I am interested in the audience members with the lowest selection quality-as-received. The potential for societal fragmentation (or conversely, the width of the ‘common meeting ground’) can also be assessed from a selection quality perspective (Geiß et al., 2018).

##### 4.1. Media Types

As a benchmark for comparison, and closer to traditional analyses of media performance, this study will engage in mapping news quality-as-sent from a selection performance perspective: How does selection performance

(volume, scope, bias) differ between news types and news outlets? Two rough assumptions guide my working hypotheses: (1) At the national level, elite or quality newspapers address politically sophisticated readers (that tend to be more educated and wealthy) with hard news and serious, low-key presentation (in contrast to tabloid newspapers). In the quality newspaper segment, outlets address different segments of the left-right political spectrum who expect that their political ideology is reflected in the newspaper’s coverage. ‘Quality newspapers’ typically have a good reputation and are therefore influential among decision-makers and journalists. They are attributed high importance, despite their limited immediate audience (Kepplinger, 1998). Quality newspapers should provide the greatest amount and diversity of information/speakers, but with substantial imbalance between political camps due to the politicized and partisan audiences they address; and (2) In contrast, TV news and regional newspaper markets in Germany are not partitioned by political ideology but address the widest possible audience by adopting a centrist editorial line. They try to attract and address audiences regardless of their politicization and political ideology. In particular, the volume of political information will be lower to not overstrain the audience; this finds expression in relatively short airtime/little page space allocated to national political issues. Both TV news and regional newspapers should also report in a balanced fashion to not deter potential users with strong ideologies:

H1: Quality newspapers cover current affairs issues at (a) greater volume, (b) in greater scope and (c) with greater imbalance than regional newspapers and TV news.

Expectations are more ambiguous for online news. Online news are projection surfaces for hopes and fears regarding news quality. Scholars have voiced the apprehension that news coverage online may be less voluminous, less comprehensive and less rigorous, and online news media more strongly than other media provide only “more of the same” (Boczkowski & Santos, 2007; Klinenberg, 2005). Others have stressed continuities between online news and their offline counterparts (Humprecht & Büchel, 2013). Facing these two competing assumptions for online news, I ask:

RQ1: How does the (a) volume, (b) scope, (c) imbalance in online news sites compare to quality newspapers, regional newspapers, and TV news?

##### 4.2. The Bumpy Transition from News-as-Sent to News-as-Received

The next step is to assess how news quality-as-sent is transmitted to the audience’s news quality-as-received. A particular focus is on those whose news quality-as-received is low, which processes lead to deprivation, and

which role individuals' news choices play in producing lower quality-as-received: What quality of information do average citizens receive from the media they actually use compared to the whole set of relevant news media and compared to single news media's performance (in terms of *volume*, *scope*, *bias*)? What about the bottom 25% and the bottom 5% of citizens?

News quality-as-received can only be as high as news quality-as-sent—the latter defines the upper limit. But two major factors should contribute in a systematic way to lowering news quality-as-received compared to news quality-as-sent: News avoidance (Van den Bulck, 2006) and partisan selective exposure (Garrett & Stroud, 2014) are expected to contribute to these problematic outcomes.

#### 4.2.1. News Avoidance

The overall extent of news use intervenes between news content available and received. In its most extreme form, some citizens may intentionally or unintentionally avoid news and not use any current affairs news; others may boycott particular sets of news media; yet others may simply reduce their news exposure to a minimum. These are forms of intentional news avoidance (Van den Bulck, 2006). Intentional news avoidance is more widespread among younger, less educated citizens with lower income (Ksiazek, Malthouse, & Webster, 2010), potentially contributing to stratification of political informedness along socioeconomic divides. The share of news avoiders has increased in the last decades, up to around 10% in Germany in 2010 (Elvestad, Blekesaune, & Aalberg, 2014), probably as a result of increased availability of non-news content (Prior, 2007). I therefore expect:

H2: A high share of citizens (10% or more) practices total news avoidance.

By practicing news avoidance, a sizable part of the citizenry inflict information poverty on themselves by not following any news media. Per this study's methodology this will lead to estimated exposure volume and scope of zero.

Depending on how widespread it is, news avoidance may lead to a problematic stratification by itself. Beyond that, I will look at those who do use news media, but rarely. I will explore how much the lower and lowest strata of the citizenry lag behind the average citizens (Barabas & Jerit, 2009).

RQ2: What news quality (volume, scope) will the 50%/25%/5% of citizens with the lowest scope of exposure receive?

#### 4.2.2. Partisan Selective Exposure

Partisan selective exposure is the outcome of various processes that lead to disproportionate exposure to con-

tent that corresponds to one's own ideology, particularly one's political orientation (Garrett & Stroud, 2014). If one's own political orientation affects the choice of outlets one habitually uses, this should result in substantial polarization of exposure as compared to content supplied as a whole. At the outlet level, one would habitually use news outlets one expects to report in line with one's political orientation. Conservative citizens will look for conservative news outlets, liberal citizens will look for liberal news outlets.

H3: Magnification of imbalance: Average imbalance of exposure is greater than average imbalance in media coverage.

#### 4.3. Fragmentation

There are concerns that societies may experience an erosion of the 'common meeting ground' between citizens. A 'common meeting ground' is a set of common concerns and narratives (SUs), information and arguments (IUs) and relevant actors (PSs) involved in the issue that large parts of the citizenry of a country share (Fletcher & Nielsen, 2017; Webster & Ksiazek, 2012). However, to assess the risk for fragmentation, scholars lack some basic information: How widespread can we expect particular SUs, IUs and PSs to be in the first place? If news media simply provide "more of the same" (Boczkowski & Santos, 2007), most SUs, IUs and PSs should be very widespread and the common meeting ground would be sizable. If news outlets have grown more fragmented, there should be little overlap in the SUs they cover and the IUs/PSs they present (Geiß, 2015). This study explores the typical size and shape of this common meeting ground in issues that are high on the media and the public agenda.

RQ3: How large is the common ground of SUs, IUs, and PSs? What share of the subtopic, information, and PS universes reaches at least 25%/50% of the population?

#### 4.4. News Use and Quality-as-Received

After having obtained a better understanding of the severity of self-inflicted information deprivation and the potential extent of fragmentation, I shall focus on predictors of higher or lower selection quality-as-received: To what degree does media use of participants—extent of news use in general, use of specific media types (such as quality newspapers, TV news etc.), and most specifically use of particular news outlets—predict volume, scope and imbalance of SUs, IUs and PSs received?

##### 4.4.1. Volume

All news outlets will cover SUs, IUs and PSs such that simply using more news will boost the volume of expo-

sure (H4). On top of that general effect, using quality newspapers more will boost volume even more due to high volume of political news coverage they provide (H5). There is, however, no reason to assume that specific outlets within each media type should have specific effects on volume of exposure (H6).

#### 4.4.2. Scope

More volume could go along with greater scope as well. But some scholars warn that more exposure may simply mean getting “more of the same” content (Boczkowski & Santos, 2007). Therefore, there is the possibility that simply using more outlets or more outlets of a particular type would not meaningfully extend the scope of exposure, only the volume. However, studies of issue coverage suggest that the overlap between news outlets may be relatively small (Rössler, 2003). In fact, some scholars apprehend that the diversity of issues and information could contribute to societal fragmentation and political polarization (Webster & Ksiazek, 2012). This gives rise to the following question:

RQ4: How do news use in general, news type use, and news outlet use contribute to explaining scope of SU, IU and PS exposure?

#### 4.4.3. Imbalance

There are two widespread ideas regarding imbalance: (1) Editorial lines of news outlets determine the imbalance (Kepplinger et al., 1991) such that individual outlet choices would mainly determine the level of imbalance-as-received; (2) More or less all news media (or at least: the ‘mainstream’ news media) create a common or consonant ‘media reality’ by emphasizing the same SUs, IUs and PSs—and neglecting others (Bennett, Lawrence, & Livingston, 2007). This way, individual outlet choice is not important but rather more intense media use would lead to greater imbalance. I will therefore explore:

RQ5: How do news use in general, news type use, and news outlet use contribute to explaining political imbalance of SU, IU and PS exposure?

## 5. Method

### 5.1. Design

The study combines a survey with content analysis data. To keep the list of news outlets to include in the content analysis manageable, I drew a regional survey sample from one metropolitan area in Germany. News outlets were selected if they were used regularly (i.e. once a week or more often) by more than 5% of the survey respondents, leading to a selection of five TV newscasts (Tagesschau [ts], Tagesthemen [tt], Heute [h], Heute Journal [hj], RTL aktuell [rtl]), two online news

sites (Tagesschau.de [td], Spiegel.de [sp]), two regional newspapers (Allgemeine Zeitung [az], Mainzer Rhein-Zeitung [mrz]) and two quality newspapers (Frankfurter Allgemeine Zeitung [faz], Süddeutsche Zeitung [sz]). Both online news outlets were established broadcast or print media brands that emphasize serious political news. Therefore, in online news, we would expect a relatively high volume and scope of coverage in line with the reputation of the news brands of the online news outlets.

The selected issues were Childcare Benefit Debate [Childcare], Breivik Trial [Breivik], and Syrian Civil War [Syria]. They were chosen in an issue monitoring procedure that sought to identify highly salient issues that had most different characteristics, e.g., in terms of being domestic (Childcare), foreign (Breivik) or international (Syria).

## 5.2. Survey

### 5.2.1. Sample

The study was designed as a weekly panel survey (computer-assisted telephone interviewing) for reasons not relevant in the current research context, in which the last panel wave available per participant will be treated like a cross-sectional survey. Before the primary field period (wave 1: 23–28 April; wave 2: 30 April–5 May; wave 3: 7–12 May 2012), participants for the panel were recruited in a screening survey (9–21 April 2012) with only few questions on sociodemographics and media use.

The inference population were the adult population of the selected metropolitan region. Landline telephone numbers were generated randomly. 736 persons were successfully contacted and 443 persons volunteered to participate in the main study (AAPOR RR3 = 443/2512 = .176; RR4 = 736/2512 = .293). Overall, the data used here stem from 262 participants, either from wave 2 (Breivik; the issue was dropped after week two because media coverage had declined to almost zero) or 3 (Syria, Childcare).

### 5.2.2. Measures

The only measures used here were the questions about interviewees’ news consumption in general. One set of questions was asked only the first time a participant took part in the main study to compile a list of their relevant set of news outlets; they could name up to two TV newscasts, two newspapers and two online news sites.

Then, the outlets each individual had mentioned as relevant were presented in each wave and individuals were asked to state how often they had used the outlet in the past seven days. The response format was an eight-point scale 0–7 days.

The responses were used in three versions: (1) as responses per outlet (raw data), (2) summed up by media type (quality newspapers: 0–14; regional newspapers: 0–14; TV news: 0–14; online news: 0–14), (3) summed

up to an overall score (0–42, as respondents could not name more than six news outlets overall).

### 5.3. Content Analysis

#### 5.3.1. Sample

The content analysis stretched over four weeks until the last day of the survey field period (16 April–12 May, 2012). The relevant news stories were those in the eleven news outlets that covered any of the three selected issues (Syria, Childcare, Breivik).

Only salient news stories were considered. This was to ensure that coverage is only considered if a typical user has a decent probability to be exposed to the content. For TV news, the entire newscast was analyzed. Stories in newspapers and online news sites are used more selectively such that only those articles were analyzed that were: (a) published on the front-page, (b) previewed/teased/linked on the front-page or (c) were published in the politics section of regional newspapers as one regional newspaper published no national or international stories on the front-page. The procedure ensures a better comparability of the real-world exposure to content than analyzing all news stories published.

#### 5.3.2. Measures

Before conducting the quantitative analysis, all news stories selected were subjected to a qualitative analysis of:

- The SUs or subnarratives the broader issue consists of. Each topic was subdivided into 14 or 15 SUs or subnarratives ('universe of SUs').
- The IUs the news provide, independent of whether they were provided by the author(s) or by one source or several sources. The list or 'universe of IUs' per issue had either 89 (Childcare, Breivik) or 91 (Syria) entries. Only politically meaningful information was considered; e.g., a report that mentioned the color of a politicians' jacket was dropped if it failed to show how and why this fact was significant. In cases of doubt, the information was included in the list.
- The protagonists whose statements on the issue were included in the news stories, independent of whether it was a direct/indirect quotation or a narration of their statement. To count as a PS, at least one position regarding the issue or at least one argument had to be included in the statement. The list entries mention the protagonist, not the content of their statement because that could vary over time and between outlets and overlap with IUs. The 'universe of PS' encompassed 39 (Breivik), 45 (Syria) or 73 (Childcare) entries.

These lists were included in the coding instructions and the five human coders were instructed to list all SUs,

IUs and PSs that were included in each news story. Inter-coder reliability of the coding procedure was based on 176/1076/628 codings (SUs/IUs/PSs) and led to raw agreement scores of .886/.905/.923 and Brennan and Prediger's Kappa values (chance-agreement corrected) of .772/.810/.846, respectively.

### 5.4. Content/User Linkage Analysis

Combining media use data with content analysis data to arrive at exposure data ('linkage analysis'; Erbring, Goldenberg, & Miller, 1980) has become increasingly popular in communication research (Schuck, Vliegenthart, & De Vreese, 2015; Geiß, 2019). 'Linkage analysis' involves intricate decision regarding the time window and time envelop of media effects after contact (Geiß, 2019). For the current analysis, these decisions are made very conservatively because I do not want to speculate about media effects but about contact with media content (exposure) per se. Therefore, all content respondents may have had contact with is considered (unlimited time window), and there is no reduced weight for content that has been consumed a long time ago (no forgetting curve). Apart from that, the linkage is done using outlet-specific media use and considers the placement of news stories to weight exposure because better-placed news stories are more likely to be received (Geiß, 2019).

To link content and user data, a contact probability was calculated between each news story and each interviewee, which was used to weight the content data for each individual. Contact probability weight ( $w$ ) is a product of the time weight, the use weight and the salience weight:  $w_{\text{contact}} = w_{\text{time}} \times w_{\text{use}} \times w_{\text{salience}}$ . Each of the weights ranges between 0 and 1. The time weight is '1' if the news story was published prior to the interview and '0' if it was published after the interview. The use weight reflects how likely it is the respondent has used the specific edition the news story was published in (e.g., when using 2 out of 7 editions per week  $w_{\text{use}} = 2/7$ ). The salience weight reflects how likely it is that someone who has used the edition the story was published in would also read/watch the news story (e.g., for a front-page headliner  $w_{\text{salience}} = 1.0$ ; for a minor story in the marginal column at the bottom of a less prominent page:  $w_{\text{salience}} = 0.125$ ). I collected extensive presentation features from all news stories to give each a specific weight. The weights were derived from eye-tracking studies available (Adam, Quinn, & Edmonds, 2007; Bucher & Schumacher, 2012; Holsanova, Rahm, & Holmqvist, 2006).

### 5.5. Indicators

This study investigates SU selection, IU selection and PS selection regarding four criteria: Volume, scope, tone and imbalance that the news media provide (as-sent) and that the news consumers are exposed to (as-received) according to the data linking proce-

Volume is indicated by the number of words sent/received. Scope is defined as the share of all available unique units (SUs, IUs, PSs, respectively) sent/received. Tone is defined as the overbalance of instrumental units (SUs, IUs, PSs, respectively) that are instrumental to the political right over those that are instrumental to the political left. Imbalance is based on the tone, but the measure disregards the sign—meaning that it is unimportant whether units instrumental for the left or units instrumental for the right dominate; only the distance to 0 (neutral) counts. Technically, it is defined as the absolute value of the tone.

Figure 1 illustrates how volume, scope, tone and bias are calculated. Volume is defined as how many SUs/IUs/PSs a citizen was exposed to for at least 10 seconds/23 words (which equals 10 seconds of reading at a speed of 140 words per minute); if a unit was received longer than 10 seconds, it was counted several (up to 10) times.

Scope is the share of units that (a) were present at least once in the coverage, and (b) that a citizen was exposed to for at least 10 seconds/23 words; if an SU/IU/PS was sent/received several times, it was counted only once.

Tone is the ratio of the overbalance of exposure to units with right-leaning instrumentality over those with left-leaning instrumentality (nominator) divided by the sum of exposure to all units (demoninator). Negative values indicate a bias towards the left pole, positive values indicate a bias towards the right pole. Imbalance is the absolute value of the tone. Higher values indicate a greater imbalance.

## 6. Results

### 6.1. Content-as-Sent Performance

The news-as-sent performance serves as a benchmark for assessing news-as-received quality at the user level (H1 and RQ1).

#### 6.1.1. Volume and Scope

The total number of words published about the three issues was 39111. Quality newspapers published on average 6158 words; an average online news site published 4768 words; an average regional newspaper published 3619 words, and an average TV newscast published 2005 words (Table A1 in the Supplementary File).

What share of the universe of SUs, IUs and PSs were present in the different news media? Quality newspapers and online news sites had the broadest scope. Quality newspapers featured 66%/50%/42% of the SU/IU/PS universe, respectively. Online news sites covered 56%/48%/43% of the SU/IU/PS universe. Regional newspapers (50% SU/32% IU/29% PS) and TV news (56% SU/32% IU/29% PS) were clearly behind regarding IU and PS scope.

Quality newspapers generally outperform regional newspapers and TV newscasts in terms of volume and scope of their coverage. This supports H1a and H1b. Online news sites are closer to the quality newspapers than to TV newscasts or regional newspapers regarding volume and scope of coverage (RQ1).

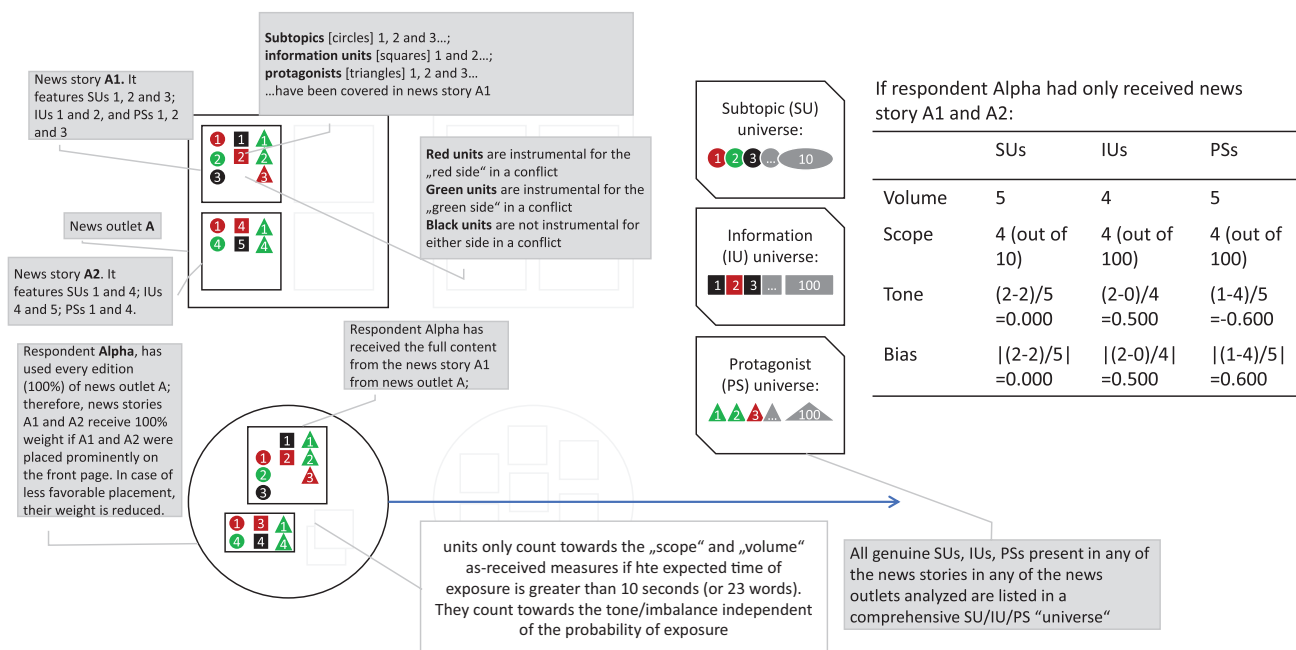


Figure 1. Definitions of quality as-sent and quality as-received measures.

### 6.1.2. Imbalance

The analysis of imbalance is restricted to the Childcare issue because it was the only classical domestic issue where a clear cleavage between camps (in this case: government vs opposition) emerged (position issue). The other two issues turned out to be valence issues (Stokes, 1963). All media had a significant SU imbalance: They consensually emphasized sub-issues that were instrumental for the opponents of the Childcare benefits (position of the 'left' opposition) ( $M = -53$ ). However, the extent of this imbalance varied with individual outlets. For instance, conservative quality newspaper FAZ had an imbalance of 32 (tone:  $-32$ ) whereas the left-leaning quality newspaper SZ had a imbalance of 61 (tone:  $-61$ ). This means that the overbalance of SUs that were instrumental for the opponents of the Childcare benefit was much more pronounced in SZ than in FAZ. Still, both had an imbalance in the same direction, despite their differing political orientations.

The IU imbalance was much less pronounced ( $M = -12$ ), and there were both outlets with a rightward and with a leftward imbalance. For instance, Heute Journal gave more weight to IUs that were instrumental for the supporters of the Childcare benefits ( $+21$ ) while Spiegel.de featured more IUs that were instrumental for its opponents ( $-26$ ). These tendencies are *cum grano salis* in line with editorial lines as perceived by MPs and their press officers as surveyed in the 1990s (Kepplinger, 1998).

PS imbalance was more pronounced and pointed into the opposite direction ( $M = +22$ ): more protagonists came to voice their arguments and points-of-view that were supporters of the Childcare benefits. All outlets exhibited this rightward imbalance, even the 'left-leaning' ones such as SZ.

Media types did not differ substantially in their degree of imbalance, in contrast to H1c.

## 6.2. Content-as-Received Quality

The news-as-received performance is compared to the benchmark in order to put user-level news quality received relates into perspective—to judge how high or low volume, scope and imbalance received is, and how stratified quality is when likelihood of exposure is the criterion (H2-3 and RQ2-3).

### 6.2.1. News Avoiders

Respondents who constantly answered that they had not used any of the 11 news media under study was 27%; for them, the data linking procedure produced an assumed volume of exposure of 0. Even when considering other news outlets they had mentioned, 24% of the participants would be counted as news avoiders, which is substantially more than in previous studies (Elvestad et al., 2014). H2 is supported, though the data possibly exaggerate the percentage of news avoiders.

### 6.2.2. Average Scope

This analysis excludes the 'news avoiders' and only considers the 73% of respondents who had used at least one of the 11 news outlets studied at least once a week. The scope of exposure relative to scope of coverage was strongly contingent on the issue: In the Syria issue, scope in exposure was *below* scope in coverage. The median respondent was exposed to a scope of 40%/21%/20% of the SU/IU/PS universe, whereas the median news outlet covered 59%/37%/37%. In the other two issues, the median respondent's scope was similar to the median news outlet's scope. The median recipient in the Childcare issue was at 54%/35%/32% (Breivik: 53%/40%/28%) and the median outlet at 57%/36%/33% (Breivik: 54%/42%/31%) (Table 1 and Figure 2). So, news-as-received performance relative to the news-as-sent depends on the issue—but news-as-received *can* match the quality of news-as-sent in a single outlet as news consumers often use more than one outlet. Content-as-received performance was good in the two issues with high media salience (Breivik and Childcare) but was relatively poor in the issue with moderate media salience (Syria). As a working hypothesis, media salience of the issue may be an important contingent condition. The lower media salience of and exposure to the Syria issue may reflect its lower geographical proximity and the fact that Syria had already been covered for several months. Obviously, strong emphasis of an issue in the media is necessary such that enough contacts with SUs/IUs/PSs come to happen.

### 6.2.3. Stratification of Scope

But what about those bottom 5% and bottom 25% with a particularly low scope of exposure (again, not considering the 27% of 'news avoiders')? In the Syria issue, the bottom 25% had contact with 27% of SUs (bottom 5%: 0%), 7% (0%) of IUs and 9% (0%) of PSs. In the Childcare issue, it were 36% (7%) of SUs, 24% (4%) of IUs, and 19% (2%) of PSs. In the Breivik issue, the bottom 25% (bottom 5%) got into contact with 40% (4%) of SUs, 26% (2%) of IUs and 13% (3%) of PSs (Table 1 and Figure 2). This answers RQ2: While the median recipient gets a small but reasonable part of the information the news media provide, the lowest 25% have contact with a substantially lower scope of subtopics, IUs and PSs that already could be precarious. The bottom 5% are in contact with extremely little information such that there is only a marginal difference to the total news avoiders.

### 6.2.4. Magnification

Imbalance in reception of SUs, IUs and PSs can only be assessed for the Childcare issue. The data impressively contradict the magnification hypothesis H3. The average tonality in the news received is more centrist than the average tonality in the news sent. Rather than extremizing



**Table 1.** Scope of coverage sent and received.

	Subtopics			Information units			Protagonist statements		
	Syria %	Childcare %	Breivik %	Syria %	Childcare %	Breivik %	Syria %	Childcare %	Breivik %
<b>Sent: Media</b>									
All media	100	100	100	100	100	100	100	100	100
Best outlet	80	87	87	68	54	76	68	49	69
Median outlet	59	57	54	37	36	42	37	33	31
Poorest outlet	20	33	27	11	19	17	11	19	3
<b>Received: Users (omitting news avoiders)</b>									
lowest 5%	0	7	4	0	4	2	0	2	3
lowest 25%	27	36	40	7	24	26	9	19	13
median	40	54	53	21	35	40	20	32	28
top 25%	53	71	60	29	43	49	31	38	38
top 5%	67	79	76	43	56	67	47	49	52
	(n = 149)	(n = 148)	(n = 154)	(n = 149)	(n = 148)	(n = 154)	(n = 149)	(n = 148)	(n = 154)

Note: News avoiders were omitted in this analysis.

or polarizing the news consumers, news-as-received are slightly skewed towards the middle-of-the-road (Table 2 and Figure 3).

### 6.2.5. Common Ground versus Fragmentation

This explorative analysis assesses the size of the common meeting ground in terms of SUs, IUs and PSs that reach a certain spread among the respondents. Figure 4 shows the penetration of each SU, IU and PS by issue, illustrating that penetration was highest in the Childcare issue and was higher for SUs than for IUs and PSs. The high share of news avoiders defines the upper limit of penetration at 73%. The share of SUs that reach a penetration of 50% [25%] or more is 36% [64%] (Childcare)/33% [53%] (Breivik)/14% [50%] (Syria). The share of IUs with a penetration of 50% [25%] or more is 17% [42%] (Childcare)/21% [42%] (Breivik)/5% [22%] (Syria). The share of PSs reaching a penetration of 50% [25%] or more is 11% [36%] (Childcare)/8% [23%] (Breivik)/5% [25%] (Syria). This answers RQ3.

### 6.3. Predicting Content-as-Received from News Use

How does the news-as-received performance react to changes in news outlet use (H4-6 and RQ4-5)? When looking at the models and the media use variables that boost explanatory power, there are two dominant patterns: Volume and scope of SU/IU/PS exposure are mostly affected by the extent of news outlet use while it is relatively unimportant which types of outlets individuals used or which specific outlets they used. This corresponds to H4 and H6 (Figure 5) and answers RQ4. Type-specific and, in particular, outlet-specific use is impor-

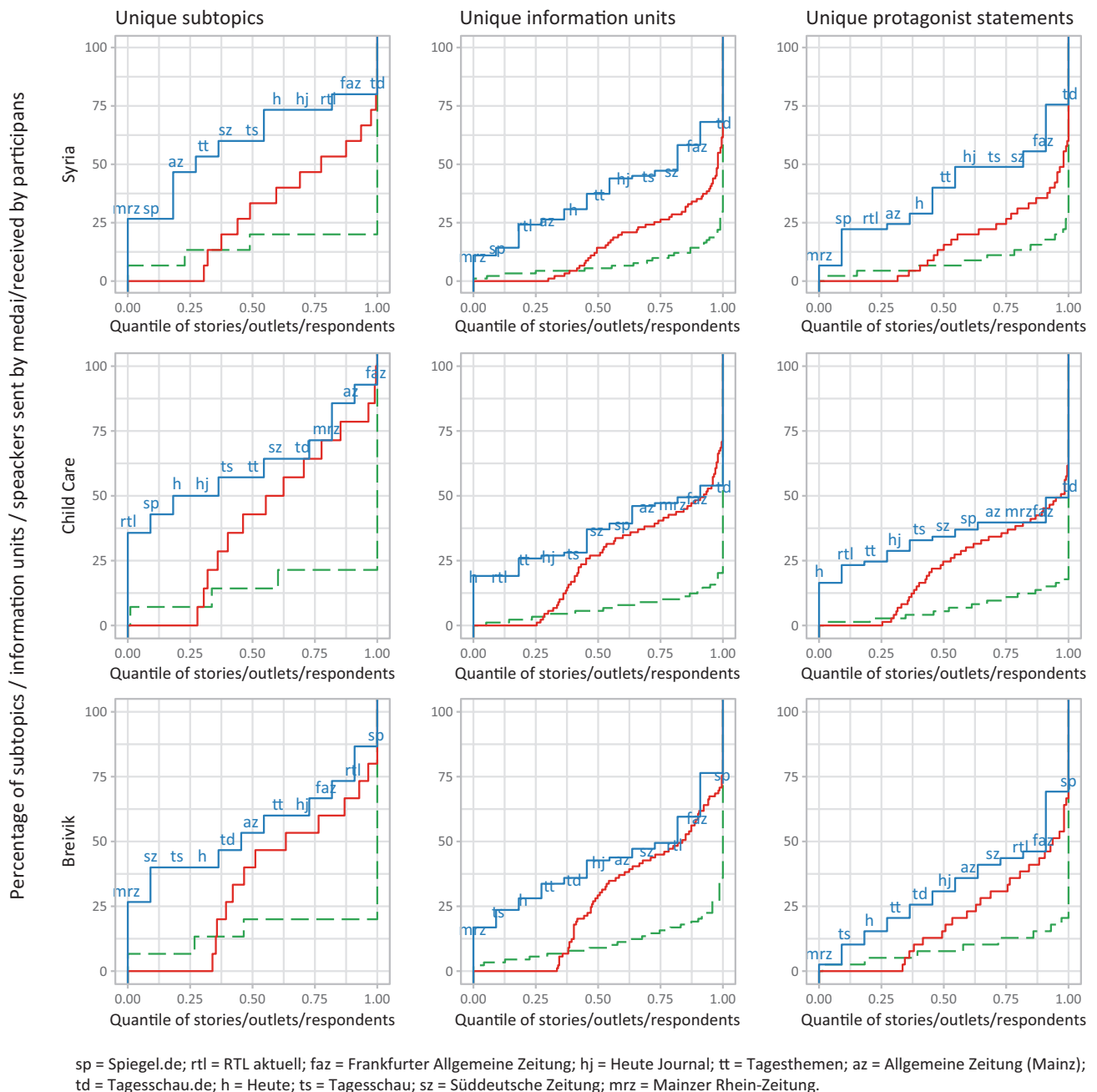
tant for explaining SU/IU/PS imbalance (Figure 5). This answers RQ5.

The coefficients of using specific outlets (Figure 6) corroborates these findings: The coefficients for volume of exposure are positive and statistically significant for all outlets (H4 supported) but quality newspapers do not systematically stand out (H5 not supported). Scope of exposure is consistently positively affected by using news outlets, relatively independent of which outlets one chooses (RQ4). Using online news all in all had a reliable positive impact on volume- and scope-as-received – but the effects were not fundamentally different from those of using newspapers or TV news. Interestingly, imbalance of exposure is systematically reduced by some outlets and systematically increased by others; still, the same outlet may increase imbalance on one content dimension (e.g., SU) but reduce imbalance on another (e.g., IU). Again, no specific outlet or media type seems to have a consistent negative effect on quality-as-received.

## 7. Discussion and Conclusion

### 7.1. A New Paradigm for Studying News Quality-as-Received: Opportunities, Challenges, Limitations

The greatest strength and at the same time the greatest weakness of the current study and the whole paradigm is its ecological approach—maximizing ecological validity at the cost of making some strong assumptions that cannot be corroborated within this research design (but probably using other research designs). For instance, the design assumes that the SUs, IUs and PSs the news media jointly provide can serve as a benchmark of high scope.



**Figure 2.** Stratification of scope as-sent (outlets: blue solid, news stories: green dashed line) and scope-as-received (red solid line).

This benchmark could include irrelevant SUs, IUs, or PSs or overlook important SUs, IUs or PSs. This is of particular importance from a framing perspective, where the omission of potentially relevant perspectives and information is one key element in the construction of frames (Entman, 2004).

There is also an element of subjectivity in assigning ‘instrumentality tags’ to the SUs, IUs and PSs: while many of these decisions are clear-cut, there are certainly some information elements and protagonists classified as ‘pro’ or ‘anti’ ‘Childcare benefits’ here that could also be classified as ‘ambivalent’ or ‘neutral’, and vice-versa. Still, the procedure of simply coding the occurrence of particular

IUs and statements and then tagging them as ‘pro’ or ‘anti’ allows much greater transparency than simply letting coders make the decisions about ‘tone’.

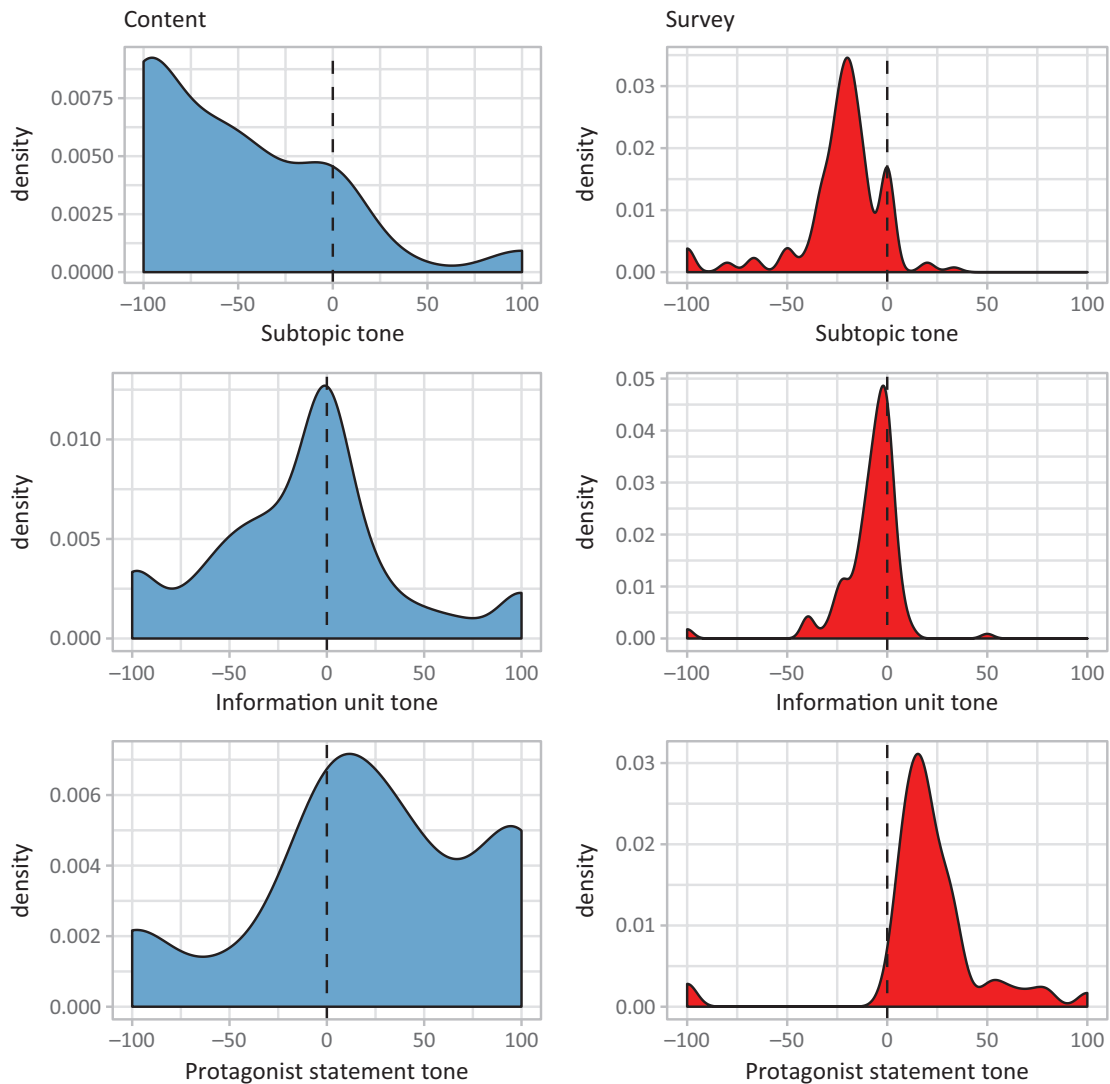
The great effort necessary to collect such data imposes additional limitations regarding the number of issues, the number of news media and the time frame that can be investigated.

Also, upscaling the paradigm to come closer to measuring exactly which news stories an individual had contact with is challenging. In the current study, the data on news consumers’ behaviors—even though at the state-of-the-art—is relatively crude: there is only a probability of having used an edition of a news outlet and I as-

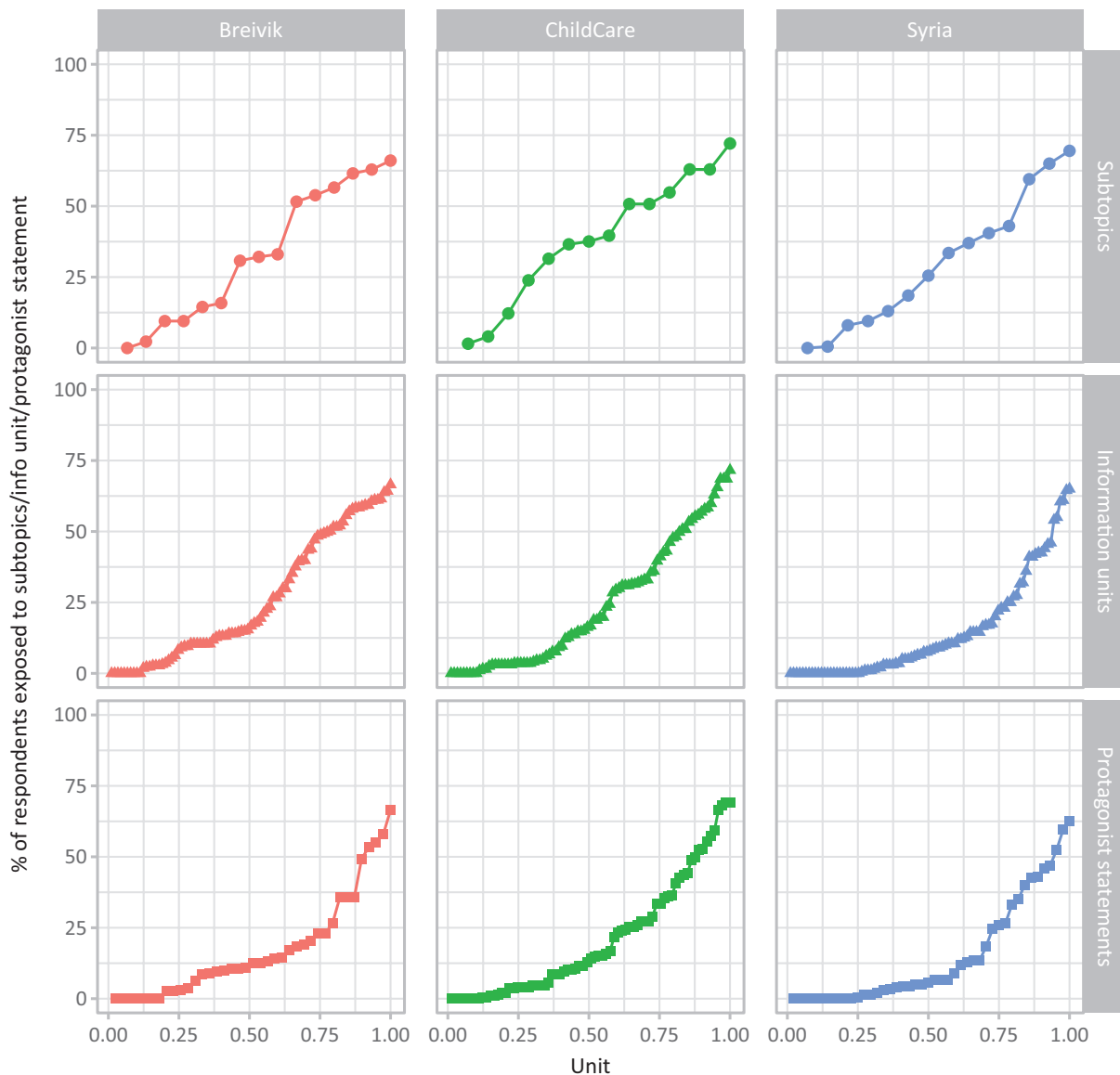
**Table 2.** Imbalance of coverage sent and received.

	Subtopics		Information units		Protagonist statements	
	Tone	Imbalance	Tone	Imbalance	Tone	Imbalance
<b>Sent: Media</b>						
Leftmost outlet	-75	75	-32	32	0	0
Most balanced outlet	-32	32	0	0	0	0
Rightmost outlet	-32	32	24	24	69	69
Average outlet	-53	53	-12	12	22	22
<b>Received: Users</b>						
leftmost 5%	-67	0	-27	0	0	5
leftmost 25%	-27	13	-12	3	11	12
Median	-20	20	-5	6	18	19
rightmost 25%	-13	28	0	13	30	32
rightmost 5%	0	67	5	31	69	80

Note. News avoiders were omitted in this analysis.



**Figure 3.** Stratification of tone-as-sent (news stories: left; blue) and tone-as-received (respondents: right; red).



**Figure 4.** Size of the common meeting ground for subtopics, IUs and PSs (based on the scope measure).

sume that news consumers select news stories according to their salience only. Including richer news outlet and news story choice data (e.g., using copy-test, diary or tracking data) is a promising direction to go in to increase the precision of the exposure estimates. Still, the same paradigm and analysis techniques could be used, with more precise underlying data. Considering exposure through ‘information intermediaries’ poses an additional challenge.

*7.2. Exploratory Insights into the Structures of Political Information Intake*

The hypotheses and research questions are of general relevance, but the generalizability of the empirical findings presented here is limited as it is a single-country study of Germany. The situation in Germany, however, should resemble that in other Democratic-Corporatist media systems with strong public service broadcasting to some de-

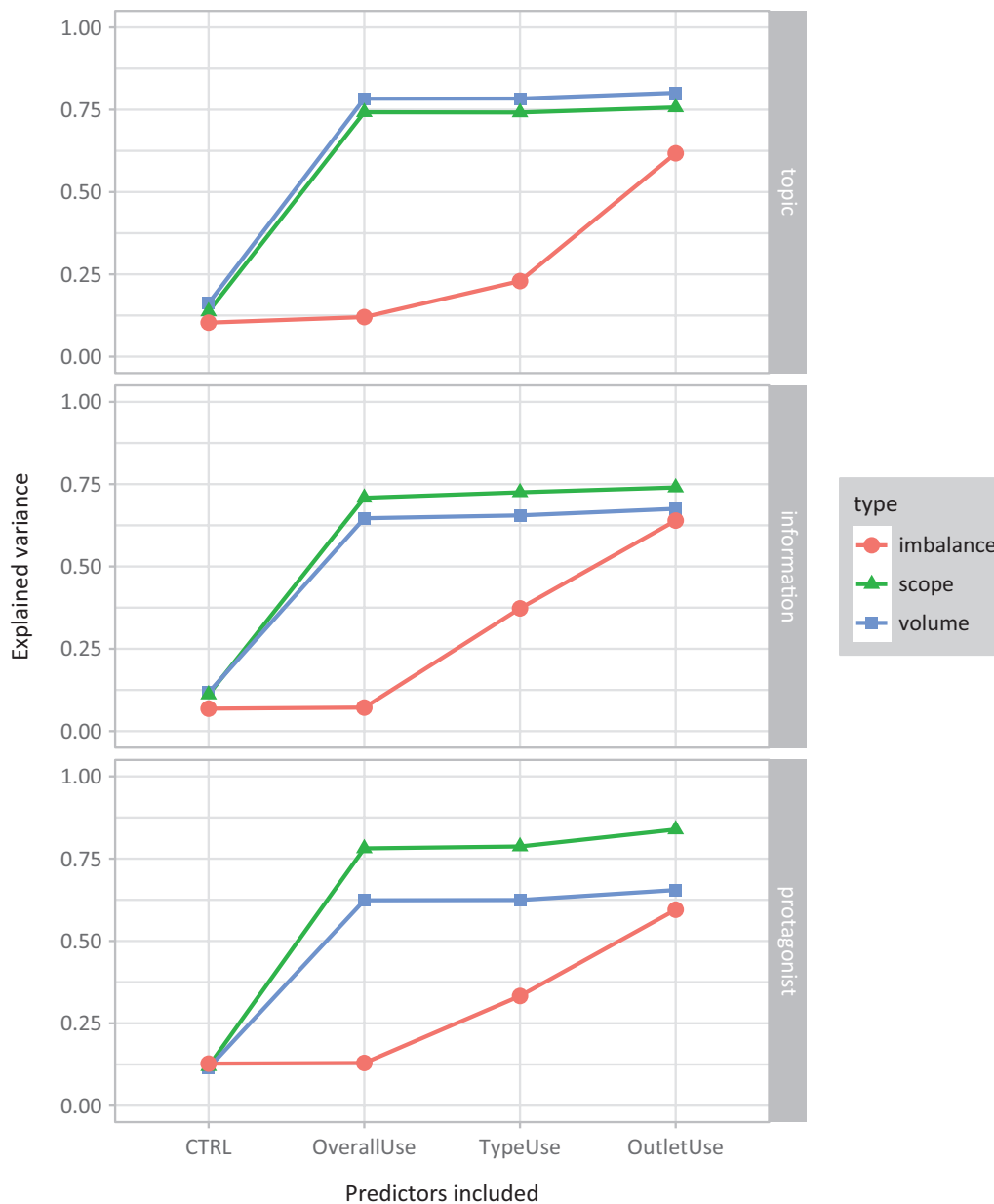
gree; still, the generalizability of the results needs to be checked by applying similar designs in various contexts or comparative studies.

7.2.1. Volume

Volume of news coverage varied substantially between the issues, with the Childcare debate getting almost twice the coverage as the Syrian Civil War. Of course, the sheer volume does not always count, but more voluminous coverage and exposure was strongly linked with a greater scope of coverage and exposure in the present study.

7.2.2. Scope

All media had considerable ‘blind spots’ in their coverage, even the quality newspapers. The other news outlets complemented the coverage of even the most information-rich outlets. To be sure, the ‘blind spots’



**Figure 5.** Explanatory power of model components for predicting volume, scope and imbalance of exposure.

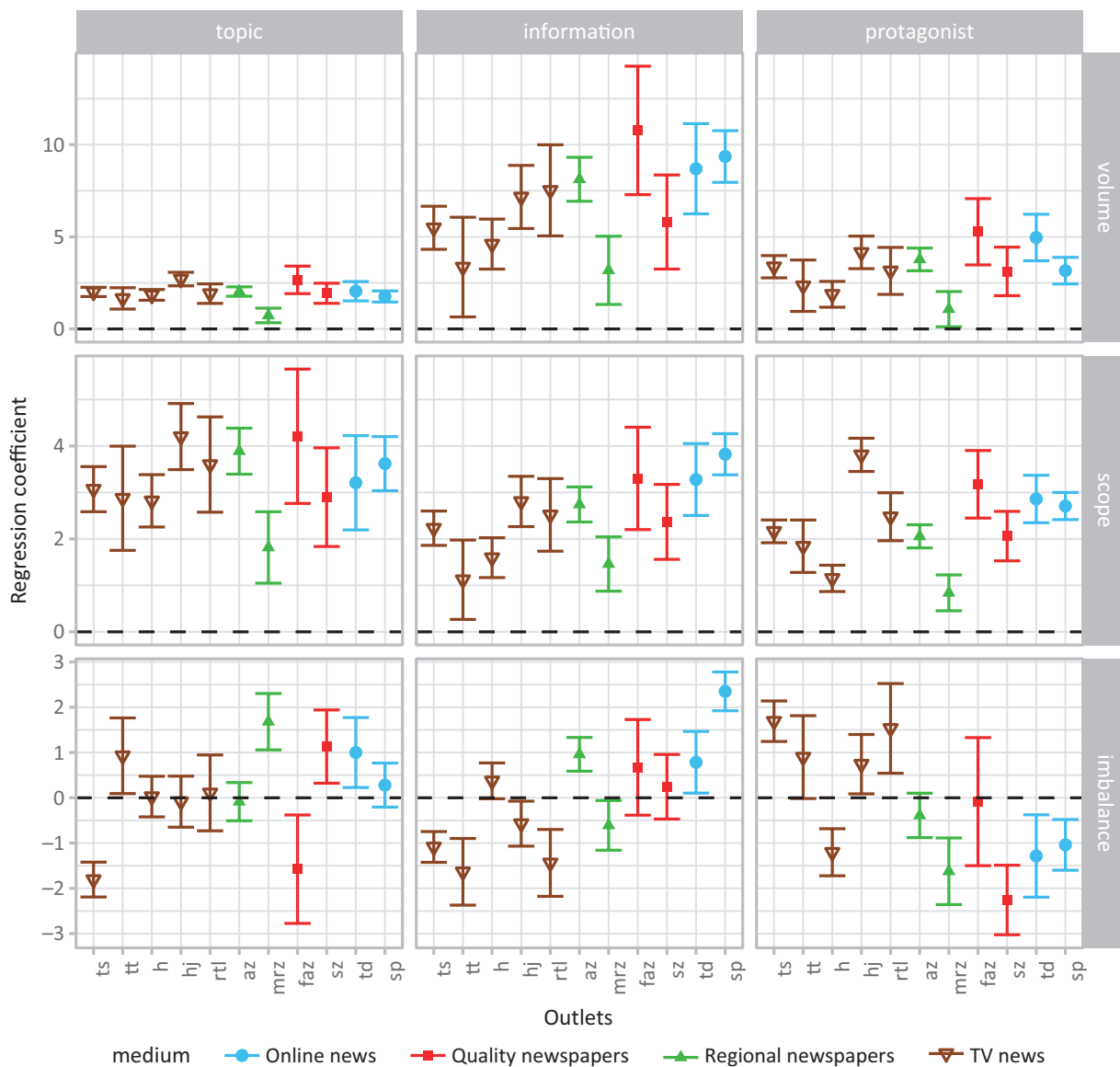
were considerably smaller in quality newspapers and online news sites, compared to regional newspapers and TV news, particularly when viewing information scope and protagonist scope. Still, all media contributed important puzzle pieces to the overall picture of the issues: A qualitative inspection of the SUs, IUs and PSs provided only by single outlets (not reported here) showed that regional newspapers were strong in providing a regional or local ‘spin’ in the Childcare issue. TV news were relatively strong in covering the Syria Conflict more continuously than the print and online media.

The most clear-cut predictor of a high scope of exposure is simply to use more news. Even a quality newspaper readers would benefit from tuning in to TV news in addition. The news media’s coverage of current issues is only mildly repetitive and the information over-

lap between different outlets is limited. The idea that using more news would only provide “more of the same” seems unsubstantiated even in intensively covered issues. The way news consumers make use of the news at the moment, the average news consumer’s scope is similar to that the average news outlet provides, but much below that of the news outlet with the greatest scope or the scope of all news outlets taken together.

### 7.2.3. Stratification

The data impressively show that not only news avoiders have severe information gaps. The least-informed 5% came into contact with only a handful of SUs, IUs and PSs. The least-informed 25% (omitting the news avoiders) only came into contact with less than half of the SUs,



sp = Spiegel.de; rtl = RTL aktuell; faz = Frankfurter Allgemeine Zeitung; hj = Heute Journal; tt = Tagesthemen; az = Allgemeine Zeitung (Mainz); td = Tagesschau.de; h = Heute; ts = Tagesschau; sz = Süddeutsche Zeitung; mrz = Mainzer Rhein-Zeitung.

**Figure 6.** Estimated impact of news outlet use on volume, scope and imbalance of exposure. Table A2 and Figure A1 in the Supplementary File document the analyses in more detail.

roughly a quarter of the IUs, and one fifth of the PSs in the intensely covered issues (Brevik, Childcare). In the less-intensely covered Syria issue, these figures were substantially lower. This gives testimony to great stratification of SU/IU/PS exposure.

#### 7.2.4. Fragmentation

The stratification of exposure quality also puts severe limits on the generation of a ‘common meeting ground’—even when issues are in the focus of public and media attention. In the Syria issue, only 14% of SUs, 5% of IUs and 5% of PSs can be assumed to reach more than half the citizenry through the media they use. The share of SUs, IUs and PSs with a 50% penetration was somewhat

higher in the other two issues, but still meagre. Though contact with SUs/IUs/PSs through other channels is possible, collective awareness can at best be assumed for a very small core set of SUs, IUs and PSs.

#### 7.2.5. Imbalance

The analysis of imbalance is limited to a single issue (Childcare debate) as it was the only domestic policy debate. Interestingly, there was great imbalance for SUs and for PSs that were observed across news outlets: All outlets exhibited a ‘leftward’ imbalance regarding the SUs, and all had a ‘rightward’ imbalance regarding the PSs. Editorial policies only mildly affected the overall picture. The imbalances translated to the audience, with a

skew towards greater ‘balance’. Contrary to expectations, recipients’ news outlet preferences did not ‘polarize’ the content the news provided, also because news outlets did not ‘color’ the issue in ideological terms. In cases or contexts where coverage is more polarized, partisan selective exposure may play a more significant role. Also, designs that can consider selectivity at the story level rather than at the outlet level only may be better suited to discover patterns of partisan selectivity.

In this study, imbalance in the news coverage seemed to be more an expression of news media logic (Asp, 2014) than product of ideological biases. The dominance of SUs that are instrumental for the ‘left’ reflects that the opposition successfully set the subtopic agenda. The opposition recognized that the Childcare benefits were unpopular and could trigger a government crisis as the issue divided the three government parties. The government parties had to defend against these criticisms and deal with the coalition crisis. Therefore the most salient SUs were the ones most critical towards the Childcare benefits. In contrast, the dominance of the supporters of the Childcare benefits among the PSs results from their position in power: Supporters of Childcare benefits were in charge and had to respond to criticisms, defending the policy proposal and laying out their rationale. The political opposition decided on the battlefield (SUs), but the government parties had the stronger weapons (PSs), leading to a roughly balanced contest regarding the IUs.

#### 7.2.6. The Broader Picture

As a consequence of their media use choices, many citizens suffer from self-inflicted deprivation – they could get a much better impression of current affairs issues if they made other media use choices. The bottom 5% (to a much lesser degree: the bottom 25%) make media use choices that lead them to miss even most of the core information concerning the heavily covered issues I investigated. News avoiders and the bottom 5% get exposed to virtually zero information in all issues. Whether the bottom 25% can also be regarded as ‘information-deprived’ depends on the issue-at-hand: in the Syria issue, even the bottom 25% received SUs, IUs and PSs with very low scope; in the Brevik and Child Care issues, the bottom 25% received at least a solid core set of SUs, IUs and PSs. This full and partial self-inflicted deprivation is, most likely, also the major cause for the limited size of the ‘common meeting ground’ in terms of shared SUs, IUs and PSs.

But is it the sheer (low) amount of news use or is it the (poor) choice of specific outlet types or outlets that causes deprivation in terms of low volume and low scope of exposure? This study indicates that the major factor is simply that individuals use too little news in general. Rarely using news causes low volume and low scope of exposure, relatively independent of which specific news outlet one chooses to use or not use.

This analysis has illustrated how the quality of news-as-sent and news-as-received can be compared, and that the ensuing results are meaningful for analyzing public discourse. The distinction between news-as-sent and news-as-received has proven anything but trivial, but fruitful. Broader application of this analytical framework will contribute to our understanding of how information use affects public opinion formation against the background of public discourse.

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#### Conflict of Interests

The author declares no conflict of interests.

#### Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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