Framing Effects in the Wild

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Abstract

A large body of experimental work suggests that individual attitudes can easily be altered by emphasizing different aspects of the issue at stake. However, such experimental studies of *emphasis framing* are limited in their emulation of the real world, where consumers are treated by multiple sources, select their news content, and pay more or less attention compared to the experimental setting. I exploit a rare change of news framing in the major German tabloid newspaper *Bild* to study whether experimental estimates of framing effects translate into the real world. In a first step, I apply supervised transformer models to a novel dataset of 2.5M news articles and provide evidence of a substantial shift in the paper's migration framing following an editorial change. Second, I use a difference-in-differences design on a panel datset of over 16,000 individuals in ten waves to assess the precise impact on migration attitudes. The estimated effect is thirty times smaller than similar estimates from experimental studies, statisticially indistinguishable from zero, and significantly smaller than even minimal relevant effect magnitudes. Further analyses show that no change can be observed on other, related dependent variables either and show no evidence for outward or inward selection into the newspaper. Taken together, these findings fundamentally challenge the external validity of framing effects research and suggests more limited influence of the news media on public opinion than previously thought.

WORD COUNT:

1   Introduction: Does Framing Matter?

The persuasiveness of the news media has been a fixation of research on political communication and public opinion for at least the past 100 years. One of the largest fields within this literature is concerned with framing effects. A huge body of experimental evidence suggests that citizens substantially alter their issue attitudes when presented with different frames (Busby, Flynn, and Druckman 2019; Chong and Druckman 2007b; Leeper and Slothuus 2020; Nelson and Kinder 1996; Nelson, Clawson, and Oxley 1997; Sniderman and Theriault 2004; Slothuus 2008a). However, there is little research investigating whether these findings translate into a messy reality (Barabas and Jerit 2010), where frames are communicated by specific actors, and citizens self-select into media outlets, potentially shielding them from some frames and exposing them to others.

In fact, many researchers argue that the effects of media content on attitudes are minimal. Observational research on media effects is abundant (Broockman and Kalla 2022; Durante and Knight 2012; Foos and Bischof 2022; Grossman, Margalit, and Mitts 2022; Guess et al. 2021; Levendusky 2022; Martin and Yurukoglu 2017; Spirig 2020), but has rarely paid attention to the precise content affecting issue attitudes (see Djourelova 2020 for an exception). To the authors knowledge, no existing observational study assesses the causal effect of changing news framing on issue attitudes.

I address this gap in the literature by presenting evidence from an editorial change in the largest German tabloid *Bild*, resulting in an increasing emphasis of crime in the paper's migration coverage. The case is ideal to assess the everyday influence of issue frames on public opinion, as one outlet changed it's framing while other papers maintained theirs. By employing BERT models for the measurement of crime frames in a corpus of 2.5 million newspaper articles, I am able to clearly identify the treatment - something that is usually left to experimental studies. Coupling this data with a large-scale panel survey

of over 15,000 individuals allows the precise estimation of this framing effect with a difference-in-differences design.

The results show that emphasis framing does not affect citizens' political attitudes in the real world. The influence of the news media on opinion formation in contemporary news environments with high levels of consumer choice and diverse exposure seems to be rather limited. Similarly, the study contributes to the media effects literature by investigating the effects of changing news *content* on public opinion, independent of the effects of the changing availability of news *outlets.* More generally, this research has important implications for our understanding of contemporary democracies, questioning the role of the media in public opinion formation.

The paper will proceed as follows: in the next section I will briefly discuss the existing literature on framing and media effects, before describing the theoretical framework and research design, including case, measurement, and estimation strategy. The results section will then showcase findings from difference-in-differences and fixed-effect models assessing the impact of increased emphasis of crime in news coverage about migration, both on the association of attitudes about crime with attitudes about migration, as well as migration attitudes themselves. Lastly, I discuss the wider implications of the findings for the study of framing effects and the role of the news media in the opinion formation process.

2   Limits of Framing Experiments

Experiments offer strong internal validity at the cost of weaker external validity, compared to observational research. Framing effect studies offers strong evidence that the association of issues with different considerations in political communication can change reported attitudes about these issues, however it is unclear whether changing news content in the real world affects consumers' attitudes similarly. Figure 1 shows the main causal steps between frames in news content and reported individual attitudes. First (step 1), a frame in communication in news content needs to be presented to a respondent. While framing studies usually simply present a news article or other forms of political content to respondents, news content in the real world competes with other news and entertainment content to reach its audience. Additionally, changes in news framing itself might affect how likely readers are to consume news content: readers might be less likely to consume frames challenging their existing attitudes and reject news outlets containing such frames (and vice

versa seek out attitudinally congruent information). This idea of 'selective exposure/avoidance' (Bennett and Iyengar 2008), or a a 'confirmation bias' (Taber and Lodge 2006) or is one of the main arguments against the use of correlational evidence to study the effect of news content.

Once the consumer receives the content, e.g. buys a newspaper, visits its website, or is exposed otherwise, it is not clear whether the content is actually engaged with (step 2). E.g., a consumer might well buy a newspaper but skip an article after reading the headline because the topic is not of interest or the frame is at odds with their existing attitude (Lau, Rogers, and Love 2021). Exposure is different from consumption mainly in that consumers actively decide to willfully engage with content rather than passively being exposed to it. As most framing studies do not offer choice of content to respondents, this steps remains an assumption in experimental studies. The assumptions of exposure and consumption in classic framing studies represent a high hurdle for the translation of experimental effects into the real world.

Step 3 connects the newspaper content [i.e. the frame in communication; (**Kinder1990?**)] with the cognition of the exposed. While the preceding steps concerned the content reaching the respondent, this step is concerned with whether the consumer of the frame actually understands the frame being communicated correctly. Step 4 makes the leap from understanding the frame to increasingly associating the issue with the raised consideration - the major mechanism by which emphasis framing is assumed to change attitudes. Step 5 then translates these changing associations into (private) attitudes, while step 6 translates them into reported attitudes. Steps 3-6 are part of any framing experiment. However, this does not mean that they might not differ in the real world. Consumption might result in better or worse comprehension in the real world (step 3) because respondents might pay more or less attention to real news content compared to experimental treatments (Barabas and Jerit 2010). Even after understanding the frame, there might be differences in how easily this translate into changing cognitive associations, given that those exposed might take real-world content more seriously. The core step of emphasis framing (5) is the change in attitudes following an increased association of an issue with the consideration raised by a presented frame. This step is likely unchanged given the mechanic translation of weighted considerations into attitudes assumed in emphasis framing theory (Ajzen and Fishbein 2000; Nelson, Clawson, and Oxley 1997). Lastly, attitudes have to translate into reported attitudes. While this is heavily context dependent (see e.g. Dinas, Martínez, and Valentim, n.d.) and differs based on the survey mode [SOURCE], it is unlikely to differ heavily in this study where attitudes are measured in a survey.

To summarize, the main challenges in the translation of experimental framing effect studies into the real world stem from 1) exposure and 2) consumption, whereas the always limited realism of treatments in experiments might limit 3) comprehension of frames in communication, as well as 4) their translation into a strengthened association of issue and consideration.
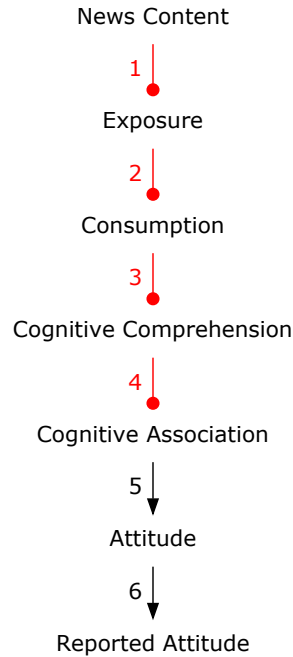

Figure 1: Causal pathway of framing effect.

Research on framing has shown for decades that citizens' attitudes are highly reactive to minor changes in question wording and emphasis of specific considerations. However, it remains unclear how well these experimental findings translate into the real world, where citizens self-select into media content, receive cues from political actors, and are usually more concerned with their private lifes than politics. Scholarly effort has therefor been devoted to test the conditions under which framing effects materialize, designing experiments which emulate different aspects of real-world environments. For example,it has been shown that exposure to conflicting frames can serve to strengthen the effect of frames one was earlier exposed to, dependent on individual preconditions (Bechtel et al. 2015; Chong and Druckman 2013; Druckman and Leeper 2012). Others have assessed what influence the sender of a frame has and shown that the effects of framing are more pronounced when the sponsor

of the frame is from one's own party (Druckman 2001; Slothuus 2010; Slothuus and De Vreese 2010). Lastly, concerns about the duration of framing effects have been addressed by some experimental research showing that those effects can last at least several weeks (Lecheler and De Vreese 2011). (missing here: Lau et al)

While these findings enable a better understanding about individuals' susceptibility to framing effects in real-world environments, the literature almost exclusively provides us with experimental evidence. Experiments can only incorporate few characteristics at a time and are limited to emulate a realistic environment for the study of news framing. As Donald Kinder puts it: "[E]xperimental results can always be questioned on their generalizability, and framing effects are no exception. [...] A more balanced reading of frame effects requires methodological diversification, experiments and studies oriented to the world outside" (2007, 157). In order to test the external validity of framing effect studies, it is necessary to study observational data.

This call for an assessment of framing effects beyond experimental studies has been echoed by various scholars over time (Busby, Flynn, and Druckman 2019; Leeper and Slothuus 2020), yet rarely been answered. Existing research is often riddled with endogeneity concerns, co-treatment or concerned with media effects broadly, instead of assessing framing effects specifically. For example, Jerit (2008) investigates the effects of framing on public opinion compared to addressing the opponents issue. She finds that reframing is less effective than engagement with the opposite parties' frames, a finding that suggests that framing is not very effective. However, this study does not try to identify causal effects, but restricts itself to the assessment of correlational evidence. Others show with similar correlational designs that only specific frames seem to drive issue importance (Mclaren, Boomgaarden, and Vliegenthart 2018), but do not assess effects on attitudes.

Other work has put more emphasis on causal identification of media effects using quasi-experimental designs, but paid less attention to the precise definition of the independent variable. This literature has usually exploited changes in news media markets such as boycotts of certain outlets (Foos and Bischof 2022), entries of new outlets (DellaVigna and Kaplan 2007; Grossman, Margalit, and Mitts 2022), changing TV channel positions (Martin and Yurukoglu 2017), or partisan takeovers of news outlets (Durante and Knight 2012; Levendusky 2022; Spirig 2020) to estimate the effects of changing news exposure on political behavior. Interestingly, the results differ across studies. While some studies find substantial effects of exposure to slanted media on political attitudes and voting behavior even in the long run (Foos and Bischof 2020;

Grossman, Margalit, and Mitts 2022), others find that consumers switch outlets when the slant of currently consumed news changes (Durante and Knight 2012; Spirig 2020).

Another approach is to assess consumer reactions to news content through field experiments. In this setup, consumers are randomly assigned to specific news outlets and the development of their political attitudes is assessed. Guess et al. (2021), for example, randomly assigned individuals to receive content from a left-leaning or a right-leaning news outlet in their online news feeds. Similar studies have assessed the ffects of cross-partisan content on TV (Broockman and Kalla 2022) and social media (Bail et al. 2018). This literature provided contradicting results as well: while some found liberalizing effects of liberal content (Broockman and Kalla 2022), others found no effects (Guess et al. 2021), or even partisan backlash (i.e. individuals becoming even more conservative in response to liberal content; Bail et al. (2018)).

I argue this lack of consensus regarding the effects of media content is at least partly related to a lack of precision in the definition of the independent variable. The vast majority of studies in this literature observes or manipulates the consumed *outlet* , rather than the *content*. This is problematic for three main reasons. First, by assuming a stable 'slant' of specific news outlets, it remains unclear which content consumers actually react to (or not). While it is certainly true that news outlets have a certain political leaning, there is variation in how political and how persuasive specific news content is. Second, citizens are often aware of outlets' political leaning. Baum and Gussin (2008) showed that consumers place the same news content more left- or right-leaning, dependent on wether it was presented as Fox news or CNN content. This implies that citizens should be able to discount political bias of outlets (muting potential effects of biased content) or might show motivated responses to content they perceive as motivated by political motives (e.g. backlash to opposing news sources). Third, by focusing on the effects of the consumption of different outlets, the literature studies a process unlikely to be observed in the real world - after all, changes in the makeup of media markets are extremely rare and switches from one partisan outlet to an opposing partisan outlet even more so. The main influence of news editors on public opinion should be exercised by editing the everyday content of news, rather than changing the consumer base of their outlets.

To my knowledge, there are only two observational studies assessing the causal effect of exposure to specific content on political attitudes. Slothuus (2010) takes advantage of a sudden shift in a political parties' framing of retirement benefits, and shows that this changed framing has substantial impact on party

supporters' attitudes about the issue. However, it is unclear how these findings translate to news framing effects, as it is impossible to distinguish the effect of partisan cue-taking from the persuasive effect of the frame itself. The only study which assesses the precise impact of changing news content on political attitudes comes from Djourelova (2020). She exploits a ban of the term "illegal migrant" in the *Associated Press* and shows that this language has modest effects migration attitudes. While the study itself reveals impressively how language can shape political attitudes, it constitutes a highly specific case and a rather minor change in the framing of migration. While news stories might lack the term "illegal migrant", they might still extensively cover crimes committed by migrants and thus associate migration with crime.

Summarized, we lack an understanding of how framing affects political opinions in the real world. While experimental evidence suggests rather strong effects, it is unclear how these findings travel outside the lab. Observational evidence on media effects is abundant but has not studied precisely what the impact of framing is. The present study therefor exploits a naturally occurring change in the news framing of a particular issue *within* a specific outlet to isolate the effects of news framing on political opinions.

3   Emphasis Framing and the Value-Expectancy Model

"Framing is the process by which a communication source, such as a news organisation, defines and constructs a political issue or public controversy" (Nelson, Clawson, and Oxley 1997). A "frame" is then the operating unit of this process, defining the issue at hand in a specific way. Different forms of frames have been conceptualised. When I talk about 'frames' here, I refer to *emphasis frames*. These frames emphasise certain topics in relation to an issue, guiding the recipient to think about the issue with those considerations in mind that are promoted by the frame (Leeper and Slothuus 2020, 152). For example, issues of increasing welfare contributions might be discussed with reference to inequality and providing chances to the poor, or by mentioning that higher welfare benefits might result in higher taxes. Individuals' support of a statement will differ dependent on the frame presented (Sniderman and Theriault 2004).

Work using the emphasis framing concept of framing - as opposed to other definitions like equivalence frames (Kahneman and Tversky 1979), episodic

frames (Iyengar 2005), or generic frames (De Vreese 2005) - mostly builds on the expectancy-value model developed by Ajzen and Fishbein (2000). This model suggests that an attitude on a given issue is a function of two things: considerations relating to that object and their respective weights. The evaluation of the issue is subdivided into a number of considerations, which will carry clear evaluations. For example, to form an opinion about whether immigration to one's country should be restricted, a person might consider the humanitarian conditions in the countries of origin (negative consideration regarding restrictive migration policy), as well as the risk of increased crime (positive consideration; note that the model does not differentiate whether a consideration is grounded in objective reality). Individuals weigh each of these considerations to form an overall opinion on the subject.

Figure 2 visualizes this logic. A given issue is associated with an attitude y. The issue is related to a number of different considerations, each of which carries an associated evaluation x_i, e.g. that crime is bad. Each of these considerations is more or less associated with the issue. Based on the strength of this association w_i, a given consideration's evaluation is more or less reflected in the issue evaluation y, which is equal to the weighted sum of considerations.
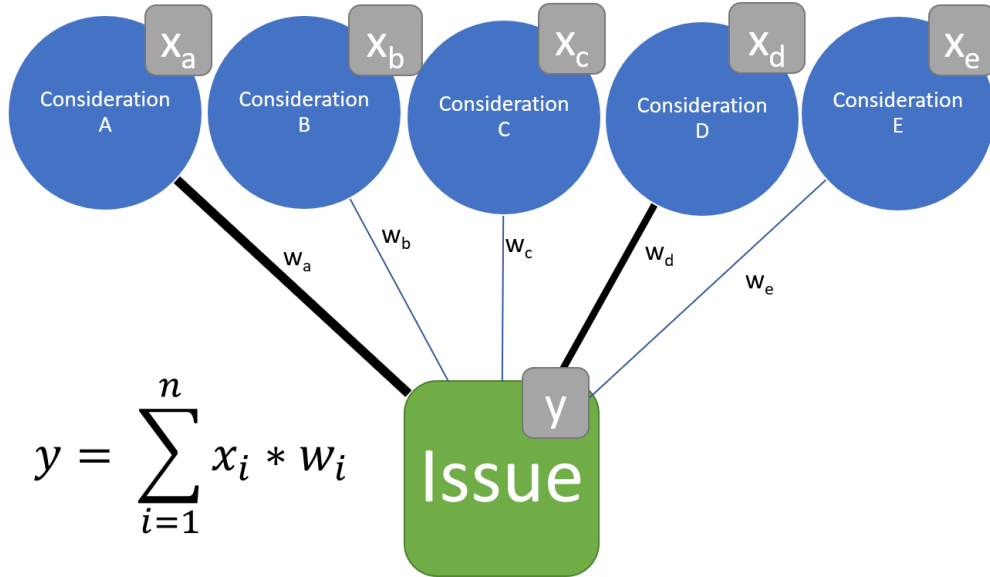

Figure 2: The cognitive evaluation of an issue y is determined by the strength of association w_i with other concepts with existing evaluations x_i.

According to this model, framing changes opinions by changing the association of a single consideration with the issue at hand. As a result, a specific consideration factors more prominently in an individuals' attitude formation process: "media frames influence opinions by stressing specific values, facts, or other considerations, endowing them with greater apparent relevance to the issue than they might appear to have under an alternative frame" (Nelson, Clawson, and Oxley 1997, 569).

Applying this to the issue of migration policy and the consideration of criminal migrants, one can imagine a news consumer confronted with an increased volume of news about crimes committed by migrants. The value-expectancy model predicts that the consumer forms a cognitive definition of migration that is increasingly associated with the issue of crime, meaning this consideration features more prominently when forming an opinion about the appropriate level of immigration policy. As a result, their opinion about migration policies should become more restrictive.

Association hypothesis: **When an individual is exposed to a specific consideration about an issue, their association of the issue with this consideration should be strengthened.**

Evaluation hypothesis: **When an individual is exposed to a specific negative consideration about an issue, their attitude about the overall issue should become more negative.**

4   Research Design

4.1   A Rare Shift in Migration Framing

In order to test whether changing news content - rather than a shift in the consumed news outlet - affected political attitudes, I exploit an editorial change in the largest German tabloid newspaper, *Bild*. As I will show, this editorial change resulted in a substantial shift in the papers' migration framing and is hence ideal to assess the effect of within-newspaper content shifts. Additionally, the fielding of a large-scale panel survey in the same period allow to assess the impact of news content on migration attitudes and how predispositions condition this effect. I will briefly discuss the context of the case in this section.

In the summer of 2015, Germany became sanctuary for around 800,000 refugees who had fled war, violence, and famine in Syria and elsewhere. The German

public debated how to deal with the newly arriving and for the first time since the post-war years, a radical right party was likely to win representation in the national parliament. Surprisingly, given its traditional populist style and right-wing takes on migration, the major tabloid newspaper *Bild* promoted an open stance towards the newly arriving in this period. This was often connected to chief editor Kai Diekmann, who hosted a refugee family in his home (Reichart 2015).

In December 2016, Axel Springer, the company owning Bild, announces that Diekmann will leave the company. Less than a week after, it becomes public that prosecutors investigate Diekmann for sexual harassment. While the company claimed that this was not the reason for Diekmann's departure, the process might have been sped up as a result of the investigations[1] ("Springer-Mitarbeiterin wirft Diekmann Belästigung vor" 2017). The migration coverage in *Bild* severely changed when Diekmann left the newspaper in February 2017 and Julian Reichelt took over the position as editor-in-chief. The paper increasingly started painting a picture of refugees as criminals on the tabloid's front page (Niggemeyer 2018; Zudeick 2018). Headlines like "I killed 40 people and want asylum" increasingly dominated the migration coverage of the newspaper. In a speech months before he took over the position as chief editor, Reichelt outlined his motivation for such a shift in migration coverage: "I can assure you: nothing has hurt [*Bild*] economically as much as our clear, humane, empathetic stance in the refugee crisis" [2]. He also argued that the German media shows too little tolerance towards anti-immigration attitudes and therefor excludes those holding such views from the political discourse.

This presents a unique case to study the effects of media content on public opinion. As outlined above, past observational studies have usually explored the effect of consuming a new/different news outlet, without assessing the precise shift in content. In this case, the shift in content took place *within* the outlet and can be clearly identified. The change of editor itself was not salient, which means any opinion changes among readers are most likely the result of the content (Spirig 2020). Additionally, the timing of the editorial change is potentially exogenous, given the pressure from allegations against Diekmann. In summary, *this case is as close as possible to a field experiment in which a specific consideration of migration coverage is amplified in the coverage of one*

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[1]According to a former editor of the newspaper I talked to, rumors in the company at the time also suggested Diekmann's departure might have been sped up as a result of the investigation.

[2]Reichelt in a speech at Deutschlandfunk's conference "Formate des Politischen 2016": https://vimeo.com/190347766

newspaper, but not others.

I estimate the effect of this communicative shift in the tabloid's migration coverage with a difference-in-differences design to answer the question how much influence the news media has to shape public opinion. Compared to the experimental setting, this can tell us with high external validity how news content affects political attitudes in contemporary news environments, in the medium term, in the real world.

4.2   Measuring Crime Frames in Migration Coverage

To measure media attention to immigration, I collected 2.5 million newspaper articles from the websites of the most important German broadsheets *Frankfurter Allgemeine Zeitung (FAZ), Spiegel Online (SPON), Süddeutsche Zeitung (SZ), Die Tageszeitung (TAZ), Die Welt* and the major German tabloid *Bild* for the period 2013-2019. Following the value-expectancy model, I identify crime frames in migration coverage in a two-step process: first, I use supervised machine learning to identify content about migration. Second, I identify content about crime *within* migration coverage by applying a similar supervised classifier. This approach closely resembles the value-expectancy model, as I first identify coverage about the *issue*, before identifying the considerations emphasized in the discussion of this issue.

Table 1 in the appendix shows the number of print copies sold and online page impressions for each newspaper per day. It becomes clear that German newspapers have a rather important position in the German news market. The tabloid *Bild* has by far the largest reach, with over 1.7 Million sold newspaper daily and around 550 million web visits per month. For reference: the German Wikipedia site had less than twice as many visits (975 million) in the same time frame [3]. *Bild* is closely followed by the weekly published *Spiegel*. The daily broadsheets sell less, and interestingly the online presence seems to be dominated by the right, given the weak presence of centre-left *SZ* and left-wing *taz*.

To identify whether an article is about migration, a research assistant annotated 1800 articles. As migration content is rare, and training data needs to be somewhat balanced, articles cannot be selected randomly. Instead, I first construct a dictionary of terms related to migration. I use dictionary extension based on German GloVe word-embeddings[4] to construct a comprehensive

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[3]Wikipedia Siteviews Analyisis: https://pageviews.wmcloud.org/siteviews/
[4]Downloadable from https://deepset.ai/german-word-embeddings.

dictionary, and apply it to the articles. Based on the relative share of migration words in an article, I draw a stratified sample of 300 articles (100 from articles with no migration terms, 100 from the quarter with most migration terms and 100 from the remainder in between) for each newspaper for a total of 1,800 papers. Then, a coder hand-coded these articles, assessing whether their main topic is related to migration.

Using this sample, a BERT transformer model[5] is fine-tuned on a subset of 1,400 annotated articles. After fine-tuning, the model correctly classifies 95.5% of the test set (F1: 0.94, recall: 0.93, precision: 0.95). This classifier is then used to annotate all 2.5 million newspaper articles. For the period from 2013 to 2019, around 90,000 (3.6%) are identified to treat the issue of migration.
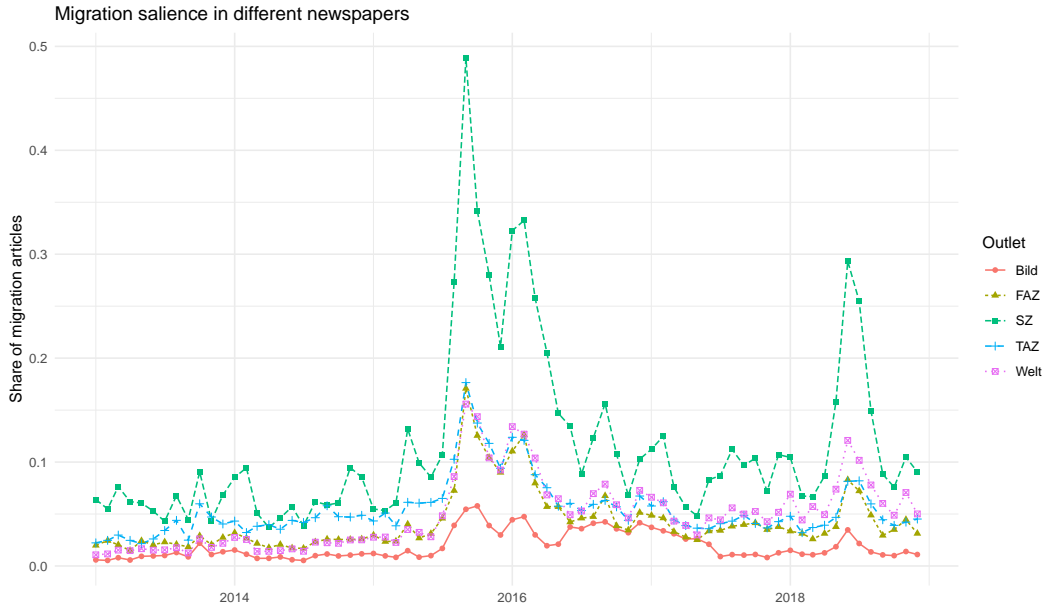

Figure 3: Share of migration content out of all content in six different newspapers.

Figure 3 shows the share of migration articles in each newspaper. Clear peaks in attention are visible surrounding the refugee movements of summer 2015, following the large-scale sexual assaults on new years eve in Cologne 2016, and the conflict over asylum policy between the conservative sister parties CDU and CSU in 2018. Newspapers seem to be event-driven and follow largely parallel trends, albeit at different levels, with the centre-left *SZ* discussing

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[5]https://huggingface.co/bert-base-german-cased

migration most and the tabloid *Bild* least. Attention decreases in mid-2016, but remains high compared to pre-2015 levels. Surrounding the fielding period of the survey waves (gray vertical lines), most newspapers show similar levels of attention to the issue between 2.5% and 6% of all articles, with the exception of *SZ*, which moves between 5% and 12.5%.

To identify migration coverage containing the crime consideration and thereby associating migration with crime, I first fine tune a BERT classifier for German language in a similar fashion as above, this time with coverage about crime as the outcome of interest. Using a training sample of 1400 articles and a test sample of 400 articles, the classifier reaches a very good performance with an F1 score of 85.7%. I then apply this classifier to classify the approximately 90,000 articles about migration identified by the first classifier. About 7% of all migration coverage consists of articles about some form of crime[6]. The share of migration content devoted to news about crime within a given time frame allows me to assess how prominent the consideration of crime as a result of migration was at a specific point in time.
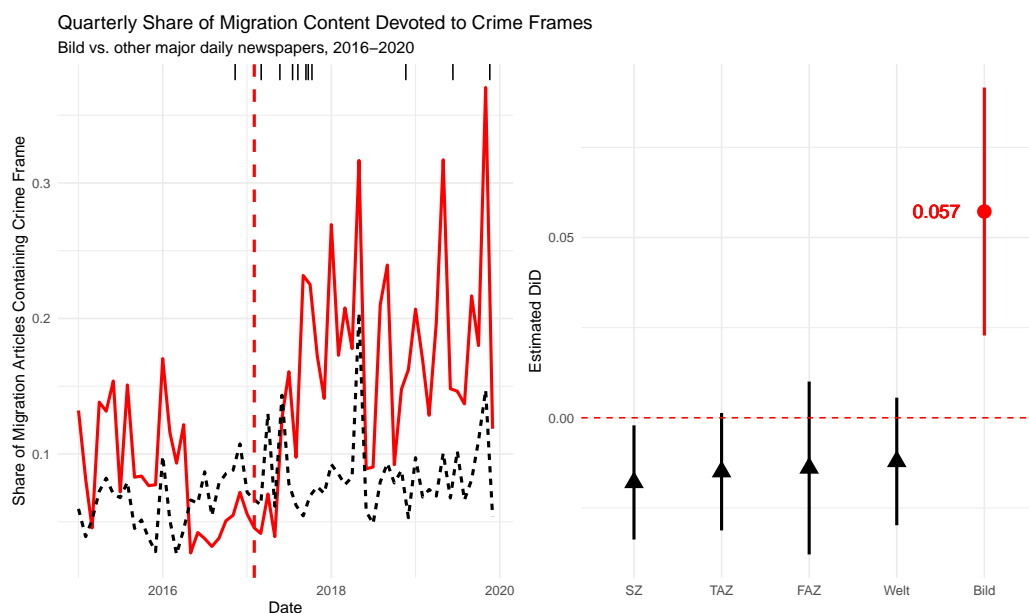

Figure 4: Estimated change in attention to crime content in migration coverage, Bild vs. other newspapers. Black ticks in left panel indicate survey waves.

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[6]See appendix 1.2 for more information about the classifier, training process and data.

The left panel of figure 4 shows the share of migration coverage devoted to crime news (solid, red line), once for Bild and once for all other newspapers (dashed, black line). As we can see, *Bild*'s attention to crime news in its migration coverage substantially increased briefly following the takeover of Julian Reichelt, while it focused less on the issue preceding the editorial change. The trends run largely parallel to each other preceding the treatment, with the major exception being the few months following the events at new year's eve in Cologne 2015/16. The right-hand panel shows difference-in-difference estimates of the crime emphasis in migration coverage of one newspaper compared to all others, before and after the editorial change in Bild. One can see that *Bild* was the only newspaper which substantially changed its emphasis of the frame, while other newspapers maintained their levels of attention. Note that estimates using a structural topic model to identify migration framing yield similar results (see appendix 2.1).

Five headlines with highest crime score
Silvesternacht-Abschlussbericht der Kölner Polizei: Männergruppen entschlüsselt
Polizei sucht nordafrikanische Straftäter: Asyl-Razzia in Dortmund!
Durchsuchung in Flüchtlingsheim - Mega-Razzia wegen Asyl-Missbrauch
Zwei Gruppen gingen aufeinander los – Wieder blutige Auseinandersetzung in Flüchtlingsunterku
Lagerkoller! Gewalt! Massen-Schlägereien! Darum kracht es immer häufiger in Flüchtlingsheimen

4.3 Measuring Immigration Attitudes and News Exposure

In order to assess the impact of this change in framing on migration attitudes, it is necessary to use data on consumers' immigration attitudes, as well as their news consumption. The 2017 Election Panel by the German Longitudinal election study luckily contains this data. This study consists of a total of 15 waves from 2016-2020, with 10,000 - 20,000 respondents per wave (Debus, Faas, and Roßteutscher 2017). Six of these waves contain questions on immigration attitudes, asking respondents whether immigration of foreigners should be restricted or made easier. Responses where recorded on a seven-point Likert scale. This variable was centered on zero (-3 - easier, 3 - restricted).

The panel also contains a question on newspaper consumption, which was asked in seven waves. The question provides respondents with a list of the six major daily newspapers plus an option "another daily newspaper", and asks whether they had consumed the paper in print or read articles from their website, and if so, how many days in the past week.

4.4 Estimation

I will present evidence from two different estimation strategies to capture the effect of crime framing in migration coverage on immigration attitudes. The first will exploit the case outlined above and a *difference-in-differences* (DiD) estimator to show the effect of the editorial change - and the related content shift - on migration attitudes:

$$y_{it} = \alpha + \beta_1 * Post_t + \beta_2 * BildReader_i + \beta_3 * Post_t * BildReader_i + \epsilon_{it}$$

The dependent variable y_{it} indicates a respondent's migration attitude in a given survey wave, measured on the Likert scale described above. The conditioning variable $BildReader_i$ is a simple binary variable indicating whether respondents read *Bild* in the past week and is measured in the pre-treatment wave. $Post_t$ indicates whether an interview took place preceding or following the editorial change. The estimator of interest is β_3, which indicates the change in migration attitudes of *Bild* readers following the editorial change, controlling for pre-treatment differences ($BildReader_i$), as well as general pre-post shifts in migration attitudes ($Post_t$).

4.5 Difference of Treated and Untreated Units [or matching]

4.6 Expected Effect Size

Despite the abundance of framing effects studies, no common standard of the magnitude of framing effects exists. Even the correct measurement of the magnitude is a contested question, as different control groups can be compared (see Chong and Druckman 2007c, 109f for a discussion). Additionally, framing effects differ based on the polarization and salience of the issue (Lecheler, De Vreese, and Slothuus 2009), repeated exposure (Chong and Druckman 2007a), the sender (Slothuus and De Vreese 2010), political knowledge (Chong and Druckman 2007b), as well as the reference of certain groups (Nelson and Kinder 1996). Generally, reported effect size around 30% of the scale are not uncommon (Slothuus and De Vreese 2010), sometimes even over 40% (Chong and Druckman 2007c, 104), but most results seem to lie in between 10% and 25% of the scale when comparing pro and con arguments (Lecheler, De Vreese,

and Slothuus 2009; Nelson, Oxley, and Clawson 1997; Nelson, Clawson, and Oxley 1997; Slothuus 2008b; Slothuus and De Vreese 2010), as most studies lack a neutral control group. As experimental treatments are likely designed in order to elicit strong responses, and given biases towards null effects in the production of scientific knowledge [SOURCE], reported effects likely display a selection bias towards strong treatments. The treatment can be considered rather strong here, as the crime consideration is associated with strongly negative evaluations and the relative increase in the prevalence of this content is large. Additionally, given that readers already consumed that newspapers, the qualities of the sender should rather increase the effect size, while the high salience of the issue should decrease it. Given these considerations, I expect an effect of around 10% of the scale, or 0.6 on the seven-point scale[7], which represents a conservative estimate.

As suggested by (**Laken2017?**), I also estimate equivalence bounds indicating the smallest effect size of interest (SESOI, indicated by dotted orange line in the graph), as well as a conservative estimate of the experimentally expected effect. I define the SESOI at a 2.5% change, or 0.15 on the seven-point scale, which represents a fraction of the conservative experimental estimate and sets a fairly low bar given the strong treatment. This SESOI can be used to define equivalence bounds. Any effect estimated to lie within these bounds with statistical significance (i.e. a 90%-confidence interval in-between the positive and negative effect of this size) is too small to constitute a meaningful effect, as the hypothesis that the effect is *not* equivalent to zero can be rejected (see also **Peyton2020?**).

5   Results

5.1   Effect on Migration Attitude

Figure **??** visualizes the effect of the change in framing on immigration attitudes. Dashed vertical lines indicate the expected effect from the experimental literature. The dotted lines indicate the equivalence boundaries. If the 90% interval is contained within these boundaries, the hypothesis that the estimate is larger than the SESOI can be rejected. The point estimate indicates a 0.019-point change among Bild readers following treatment ($t = $ 0.95, $p = $ 0.34), which is around 3% of the expected effect of 0.6. The 95% confidence

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[7]As the scale runs from one to seven, it spans six points wide.

intervals also contains values far smaller than the SESOI of 0.15 but clearly include the vertical red line indicating no change. Clearly, the model suggests a null effect.
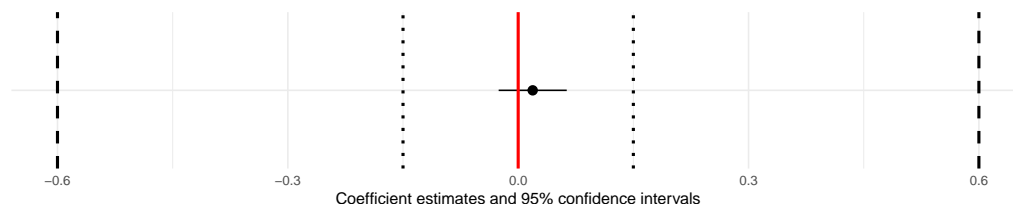

Figure 5: Effect of change in framing on migration attitudes; difference-in-differences estimate.

Figure 7 shows standardized effects of the change in newspaper framing on immigration attitudes and three related dependent variables, namely integration attitudes, the likelihood to report migration as the most important problem facing the country, as well as thermometer scores for the radical-right AfD. Dotted lines indicate a 20% standard deviation change, which has been defined as the standardized equivalence boundary in existing research (**Peyton2020?**). All estimated effects are smaller in size than 0.05 standard deviations and associated 95%-confidence intervals contain zero. This means we can reject the hypothesis of meaningful effect size, but cannot reject that the estimate is statistically different from zero. All estimates suggest a clear null effect.

To address potential long-term effects of this change in migration framing, figure 6 assesses the effect in each post-wave compared to the pre-treatment wave.

5.2   Effect on other dependent variables

5.3   Tracing the Mechanism: the Association of Crime and Migration Attitudes

As outlined above, framing theory suggests that increased exposure to a specific consideration about an issue leads to stronger association of an issue with this consideration. In the present case, this should mean that the correlation of attitudes on immigration with attitudes about crime should increase. The GLES Panel data contains a variable asking respondents whether "the state's

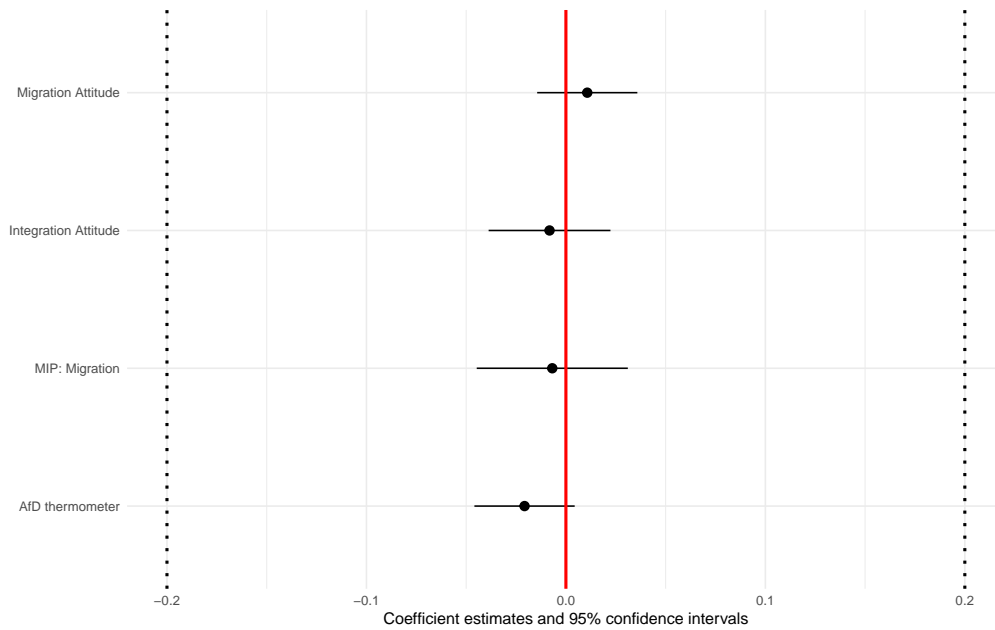Figure 6: Effect of Change in Framing on Immigration Attitudes across Waves

Figure 7: Standardised Effect of Change in Framing on Alternative Dependent Variables

capabilities to fight crime should be extended, even if that would entail more surveillance", asked in three waves overlapping with the migration attitude question. Figure 8 shows the correlation of crime- and migration attitudes in treatment and control group, pre- and post-treatment. I added a counterfactual, applying the change in the control group to the treatment group, for easier interpretation. As we can see, the treatment group actually saw a *smaller* increase in the correlation of crime and migration attitudes than the control group, *despite weaker pre-treatment association.* Following (Nelson and Kinder 1996), table **??** regresses immigration attitudes on attitudes towards crime and investigates whether this association is generally different between the two groups[8], changes post-treatment, and whether it changes more in the treatment group using interaction terms. I find minor differences between the groups, but no significant difference when interacted with the DiD-term - respondents do not seem to associate crime more strongly with migration following the change in migration coverage in *Bild.*
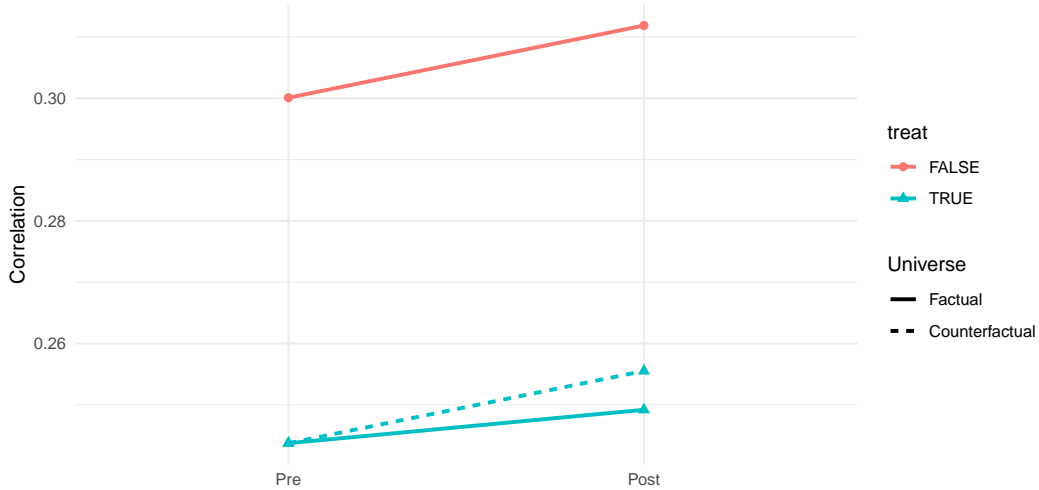

Figure 8: Correlation of crime and migration attitudes in treatment and control group, pre- (wave 1) and post-treatment (waves 3 & 13).

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[8]These differences are however in the opposite direction as the (substantial) differences in the descriptive correlations outlined in the plot. I am currently not sure how to interpret this.

	Model 1
Crime Attitude	0.457***
	(0.014)
Crime Attitude X Post	-0.005
	(0.015)
Crime Attitude X Bild Reader	0.069**
	(0.024)
Crime Attitude X Post X Bild	-0.001
	(0.028)

Note: ˆˆ + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

5.4   Outward Selection

6   Conclusion: Framing Effects in the Real World

This study estimated the causal effect of news framing on migration attitudes, exploiting a rare case of changing migration framing. Results indicate that this shift in news framing did not result in any change in migration attitudes. These findings add to a body of theoretical work and recent empirical findings questioning the media's influence on political attitudes (Guess et al. 2021; Lau, Rogers, and Love 2021). Taken together, this research suggests that the influence of the news media on opinion formation in contemporary news environments with high levels of consumer choice and diverse exposure is severely limited. Even a major change in migration framing did not change respondents' attitudes in the present study. This does not necessarily entail that classic news media has no influence at all over opinion formation, but it might at the very least be restricted to specific "windows of opportunity". The present case described an established issue that had been in the center of public debate for 1.5 years. It might well be that news framing plays a more critical role for the evaluation of emerging issues. Further research should explore this possibility, assessing the impact of similar cases of changing news framing in the real world. It remains crucial, however, to focus on precise changes in *content*, in order to improve our conceptual understanding of the effects of media exposure.

Ajzen, Icek, and Martin Fishbein. 2000. "Attitudes and the Attitude-Behavior Relation: Reasoned and Automatic Processes." *European Review of Social Psychology* 11 (1): 1–33. https://doi.org/10.1080/14792779943000116.

Bail, Christopher A., Lisa P. Argyle, Taylor W. Brown, John P. Bumpus, Haohan Chen, M. B. Fallin Hunzaker, Jaemin Lee, Marcus Mann, Friedolin Merhout, and Alexander Volfovsky. 2018. "Exposure to opposing views on social media can increase political polarization." *Proceedings of the National Academy of Sciences of the United States of America* 115 (37): 9216–21. https://doi.org/10.1073/pnas.1804840115.

Barabas, Jason, and Jennifer Jerit. 2010. "Are survey experiments externally valid?" *American Political Science Review* 104 (2): 226–42. https://doi.org/10.1017/S0003055410000092.

Baum, Matthew A., and Phil Gussin. 2008. "In the eye of the beholder: How information shortcuts shape individual perceptions of bias in the media." *Quarterly Journal of Political Science* 3 (1): 1–31. https://doi.org/10.1561/100.00007010.

Bechtel, Michael M., Jens Hainmueller, Dominik Hangartner, and Marc Helbling. 2015. "Reality Bites: The Limits of Framing Effects for Salient and Contested Policy Issues." *Political Science Research and Methods* 3 (3): 683–95. https://doi.org/10.1017/psrm.2014.39.

Bennett, W. Lance, and Shanto Iyengar. 2008. "A new era of minimal effects? The changing foundations of political communication." *Journal of Communication* 58 (4): 707–31. https://doi.org/10.1111/j.1460-2466.2008.00410.x.

Broockman, David E, and Joshua L Kalla. 2022. "The manifold effects of partisan media on viewers ' beliefs and attitudes : A field experiment with Fox News viewers *." *Working Paper.*

Busby, Ethan C., D. J. Flynn, and James N. Druckman. 2019. "Studying Framing Effects on Political Preferences." *Doing News Framing Analysis II*, 27–50. https://doi.org/10.4324/9781315642239-2.

Chong, Dennis, and James N. Druckman. 2007a. "A theory of framing and opinion formation in competitive elite environments." *Journal of Communication* 57 (1): 99–118. https://doi.org/10.1111/j.1460-2466.2006.00331.x.

———. 2007b. "Framing public opinion in competitive democracies." *American Political Science Review* 101 (4): 636–55. https://doi.org/10.1017/S0003055407070554.

———. 2007c. "Framing theory." *Annual Review of Political Science* 10: 103–26. https://doi.org/10.1146/annurev.polisci.10.072805.103054.

———. 2013. "Counterframing effects." *Journal of Politics* 75 (1): 1–16.

https://doi.org/10.1017/S0022381612000837.

De Vreese, Claes H. 2005. "News framing: Theory and typology Information." *Information Design Journal + Document Design* 13 (1): 51–62. https://doi.org/10.14429/djlit.37.2.10392.

Debus, Marc, Thorsten Faas, and Sigrid Roßteutscher. 2017. "GLES Panel 2016-2021, Wellen 1-15." Köln: GESIS Datenarchiv. https://doi.org/10.4232/1.13783.

DellaVigna, Stefano, and Ethan Kaplan. 2007. "The fox news effect: Media bias and voting." *Quarterly Journal of Economics* 122 (3): 1187–1234. https://doi.org/10.1162/qjec.122.3.1187.

Dinas, Elias, Sergi Martínez, and Vicente Valentim. n.d. "Social Norm Change, Political Symbols, and Expression of Stigmatized Preferences."

Djourelova, Milena. 2020. "Media Persuasion through Slanted Language: Evidence from the Coverage of Immigration." *Working Paper*, no. May.

Druckman, James N. 2001. "The Implications of Framing Effects for Citizen Competence." *Political Behavior* 23 (3): 225–56. http://www.ingentaconnect.com/content/klu/pobe/2001/00000023/00000003/00369814.

Druckman, James N., and Thomas J. Leeper. 2012. "Learning More from Political Communication Experiments: Pretreatment and Its Effects." *American Journal of Political Science* 56 (4): 875–96. https://doi.org/10.1111/j.1540-5907.2012.00582.x.

Durante, Ruben, and Brian Knight. 2012. "Partisan control, media bias, and viewer responses: Evidence from berlusconi's italy." *Journal of the European Economic Association* 10 (3): 451–81. https://doi.org/10.1111/j.1542-4774.2011.01060.x.

Foos, Florian, and Daniel Bischof. 2020. "Can the tabloid media create Eurosceptic attitudes? A quasi-experiment on media innuence in England," no. page 26.

———. 2022. "Tabloid Media Campaigns and Public Opinion: Quasi-Experimental Evidence on Euroscepticism in England." *American Political Science Review* 116 (1): 19–37. https://doi.org/10.1017/S000305542100085X.

Grossman, Guy, Yotam Margalit, and Tamar Mitts. 2022. "How the Ultra-Rich Use Media Ownership as a Political Investment." *The Journal of Politics.* https://doi.org/10.1086/719415.

Guess, Andrew M, Pablo Barberá, Simon Munzert, and Junghwan Yang. 2021. "The consequences of online partisan media," 1–8. https://doi.org/10.1073/pnas.2013464118/-/DCSupplemental.y.

Iyengar, Shanto. 2005. "Speaking of values: The framing of American poli-

tics." *Forum* 3 (3). https://doi.org/10.2202/1540-8884.1093.

Jerit, Jennifer. 2008. "Issue framing and engagement: Rhetorical strategy in public policy debates." *Political Behavior* 30 (1): 1–24. https://doi.org/10.1007/s11109-007-9041-x.

Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47 (2): 263–91.

Kinder, Donald R. 2007. "Curmudgeonly advice." *Journal of Communication* 57 (1): 155–62. https://doi.org/10.1111/j.1460-2466.2006.00335.x.

Lau, Richard R., Kathleen Rogers, and Jamel Love. 2021. "Media Effects in the Viewer's Choice Era: Testing Revised Agenda-Setting and Priming Hypotheses." *Political Communication* 38 (3): 199–221. https://doi.org/10.1080/10584609.2020.1763526.

Lecheler, Sophie, and Claes H. De Vreese. 2011. "Getting Real: The Duration of Framing Effects." *Journal of Communication* 61 (5): 959–83. https://doi.org/10.1111/j.1460-2466.2011.01580.x.

Lecheler, Sophie, Claes De Vreese, and Rune Slothuus. 2009. "Issue importance as a moderator of framing effects." *Communication Research* 36 (3): 400–425. https://doi.org/10.1177/0093650209333028.

Leeper, Thomas J., and Rune Slothuus. 2020. "How the News Media Persuades." *The Oxford Handbook of Electoral Persuasion*, 150–68. https://doi.org/10.1093/oxfordhb/9780190860806.013.4.

Levendusky, Matthew S. 2022. "How Does Local TV News Change Viewers' Attitudes?The Case of Sinclair Broadcasting." *Political Communication* 39 (1): 23–38. https://doi.org/10.1080/10584609.2021.1901807.

Martin, Gregory J., and Ali Yurukoglu. 2017. "Bias in cable news: Persuasion and polarization." *American Economic Review* 107 (9): 2565–99. https://doi.org/10.1257/aer.20160812.

Mclaren, Lauren, Hajo G. Boomgaarden, and Rens Vliegenthart. 2018. "News Coverage and Public Concern About Immigration in Britain." *International Journal of Public Opinion Research* 30 (2).

Nelson, Thomas E., Rosalee A Clawson, and Zoe Oxley. 1997. "Media Framing of a Civil Liberties Conflict and Its Effect on Tolerance." *American Political Science Review* 91 (3): 567–83.

Nelson, Thomas E., and Donald R. Kinder. 1996. "Issue frames and group-centrism in American public opinion." *Journal of Politics* 58 (4): 1055–78. https://doi.org/10.2307/2960149.

Nelson, Thomas E., Zoe M. Oxley, and Rosalee A. Clawson. 1997. "Toward a psychology of framing effects." *Political Behavior* 19 (3): 221–46. https://doi.org/10.1023/A:1024834831093.

Niggemeyer, Stefan. 2018. ""Asyl" nicht mehr ohne "Irrsinn" denken." https:

//uebermedien.de/30565/asyl-nicht-mehr-ohne-irrsinn-denken/.

Reichart, Laury. 2015. "Mann, ist der Diekmann." https://www.br.de/puls/themen/welt/kommentar-bild-kampagne-wir-helfen-100.html.

Slothuus, Rune. 2008b. "More than weighting cognitive importance: A dual-process model of issue framing effects." *Political Psychology* 29 (1): 1–28. https://doi.org/10.1111/j.1467-9221.2007.00610.x.

———. 2008a. "More than weighting cognitive importance: A dual-process model of issue framing effects." *Political Psychology* 29 (1): 1–28. https://doi.org/10.1111/j.1467-9221.2007.00610.x.

———. 2010. "When can political parties lead public opinion? Evidence from a natural experiment." *Political Communication* 27 (2): 158–77. https://doi.org/10.1080/10584601003709381.

Slothuus, Rune, and Claes H. De Vreese. 2010. "Political parties, motivated reasoning, and issue framing effects." *Journal of Politics* 72 (3): 630–45. https://doi.org/10.1017/S002238161000006X.

Sniderman, Paul M., and Sean M. Theriault. 2004. "The Structure of Political Argument and the Logic of Issue Framing." In *Studies in Public Opinion*, 133–65. Princeton, NJ: Princeton University Press. https://doi.org/10.2307/j.ctv346px8.9.

Spirig, Judith. 2020. "Media Take-Over and Voting Behavior : Can Politician-Owned Newspapers Sway Voters ?"

"Springer-Mitarbeiterin wirft Diekmann Belästigung vor." 2017. https://www.spiegel.de/panorama/justiz/kai-diekmann-springer-mitarbeiterin-wirft-diekmann-belaestigung-vor-a-1128822.html.

Taber, Charles S., and Milton Lodge. 2006. "Motivated Skepticism in the Evaluation of Political Beliefs." *American Journal of Political Science* 50 (3): 755–69.

Zudeick, Peter. 2018. "Der Krawallmodus wird ihr nicht helfen." https://www.deutschlandfunkkultur.de/kommentar-zur-bild-zeitung-der-krawallmodus-wird-ihr-nicht.1005.de.html?dram:article%7B_%7Did=422831.