Fake News Perception in Germany:
A Representative Study of People's Attitudes
and Approaches to Counteract Disinformation

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Abstract. Fake news has become an important topic in our social and political environment. While research is coming up for the U.S. and European countries, many aspects remain uncovered as long as existing work only marginally investigates people's attitudes towards fake news. In this work, we present the results of a representative study (N=1023) in Germany asking participants about their attitudes towards fake news and approaches to counteract disinformation. More than 80% of the participants agree that fake news poses a threat. 78% see fake news as harming democracy. Even though about half of the respondents (48%) have noticed fake news, most participants stated to have never liked, shared or commented on fake news. Regarding demographic factors, our findings support the view of younger and relatively educated people being more informed about fake news. Concerning ideological motives, the evaluation suggests left-wing or liberal respondents to be more critical of fake news.

Keywords: Fake news, disinformation, citizens' perceptions, representative survey, counteraction, Germany

1 Introduction

Information systems play a crucial role regarding peace and security [1], also with regard to interactive systems [2]. Since the 2016 U.S. presidential election, the term *fake news* is widely known and has found its way into both scientific and public debates. In Germany, the 2017 parliamentary election was accompanied by discussions about fake news. However, research shows that there was no major fake news during the campaign which had any impact on the election results [3]. Although there were many cases of fake news during the U.S. election, scholars argue that they did not have any impact on its outcome [4]. These observations suggest that the perception of fake news influencing people's attitudes diverges from its actual impact. As fake news is apparent online, it may shape users' social media experiences to varying degrees, potentially influencing important social dynamics [5–7]. Thus, we ask for a clearer picture of the population's perception of and interaction with fake news. In the context of this study, fake news is

to be understood as "all forms of false, inaccurate, or misleading information designed, presented and promoted to intentionally cause public harm or for profit" [8].

Our paper tries to find answers to the following questions: *(1) What **attitudes** do people have towards fake news? (2) Have they ever noticed fake news or **interacted** with it? (3) How do they evaluate possible approaches to **counteract** fake news?* Therefore, we conducted a representative study (N=1023) and analyzed our results referring to demographic factors as well as to perceptions of threats to peace (i.e., ideological standpoints) to ask for influential factors regarding the perception, interaction, and counteraction of fake news. This allowed us to focus on attitudinal and behavioral patterns of different groups. While it is certainly important to examine actual fluctuations of fake news, humans' respective perception may constitute an essential factor for their behavior online or in cases of counteraction. We focus our work on one country permitting a differentiated analysis and presentation of results which may prove relevant with respect to other countries across Europe. Germany is an important European country and just recently had the 2017 parliamentary elections, introducing a right-wing populist party into parliament. Therefore, we performed a study representative of the German adult population under 65 on their opinion on fake news. First, we elucidate the phenomenon of fake news and discuss relevant work (section 2). Next, we introduce the representative survey, describing our approach and methodology (section 3) and presenting the results (section 4). Last, we discuss the results and draw a conclusion (section 5).

2 Background and Related Work

2.1 Fake News as a Social Phenomenon

Before 2016, fake news mainly referred to satirical news shows; the perception changed when a lot of fake news went viral, starting to affect political parties globally and influencing opinions on a larger scale than before [9]. While being such a popular and frequent term, it is often mingled with other phenomena [3]. Its fuzzy meaning facilitates misuses of the term to discredit undesired news [10]. Furthermore, in German debates, its meaning is often mixed with hate speech [3]. Allcott and Gentzkow [4] define fake news as "news articles that are intentionally and verifiably false and could mislead readers". In contrast, misinformation refers to "information that is false but not created with the intention of causing harm" [11]. Fake news often deals with controversial issues like migration, child abuse, or war [12]. Although there is no consensus in science as to whether social media encourages the emergence of "digital echo-chambers" – that is to say: a system that amplifies and reinforces ideas of beliefs at the expense of competing vies – its popularity has been proven to facilitate the spread and success of fake news [13]. Nowadays, many people use social media instead of mainstream media as a source of information [14]. Consequently, the important role of journalism as a gatekeeper has shifted to individuals who must decide on their own whether a report is reliable [15], [16]. Well-studied occurrences of fake news appear in the context of elections although studies show that it had little overall impact on them [3], [4]. Yet, fake news may be used to manipulate public opinion and debate. According to the

German investigative journalism collective *Correctiv*, most fake news in Germany has originated from supporters and politicians of the right-wing populist party *Alternative für Deutschland* (AfD).[1] Also, radicalization on social media has been observed [17].

As a reaction to the massive fake news spread, most social networks have enabled methods to take care of the potential harms by curating, deleting and censoring content [18]. Thus, independent platforms now take the role of an information gatekeeper [19]. In 2018, the European Commission has appointed a "High Level Group on fake news and online disinformation". In October 2017, a German law came to force called *Netzwerkdurchsetzungsgesetz* (NetzDG; Network Enforcement Act). It attempts to fight fake news and hate speech by forcing platforms to quickly delete illegal contents but has been widely criticized for threatening freedom of speech.

2.2   Related Work

Over the last years, research on fake news has been emerging. Work focused on how fake news is received by individuals and potential factors determining whether fake news is considered true. Light has been shed on a cognitive heuristic called *Confirmation Bias* [20], describing the selective choice of (news) messages on the basis of matching ideologies. Marwick and Lewis [21] showed in several studies that individuals tend to forget the original source of information (*Sleeper Effect*). Subsequently, having forgotten about the untrustworthy source, the false information might be taken as true when fitting one's ideology [22]. Polage [23] described the *Truth Effect*, showing that content which is repeated often and by multiple sources tends to be taken for real at some point, independent from initial considerations.

A study by Del Vicario et al. [24] determined that (fake) news is spread especially within homogeneous groups of users with similar ideologies. In a Twitter analysis, Starbird [25] examined alternative narratives which she describes as a special kind of fake news, neither fitting one side of the conventional left-vs. right-wing cleavage but motivated by anti-globalism (e.g., criticism on the role of the US in world politics).

To investigate perception and handling of fake news by individuals, Barthel et al. [26] carried out a representative survey of 1,002 U.S. adults. According to the findings, about one third (32%) of U.S. adults "often see political news stories online that are made up" and 64% say fake news "cause[s] a great deal of confusion about the basic facts" [26]. Additionally, there are 23% who stated that they have shared a made-up story with 14% knowing it was fake. Furthermore, the participants were asked to state their opinion on responsibilities to prevent the spread of fake news. While 45% said government, politicians and elected officials have a great deal of responsibility, 43% held the public responsible, 42% social networking sites and search engines. The authors detected age as a determining factor: "Americans aged 50 and older are more likely to place a great deal of responsibility on the government" [26].

Allcott and Gentzkow [4] collected fake news headlines circulating during the U.S. election campaign. They asked 1,208 survey participants whether they had seen those headlines and whether they had initially accepted them as true. They found that 15% of

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[1] https://correctiv.org/echtjetzt/artikel/2017/09/25/wahlcheck17-zieht-bilanz-den-fake-news-keine-chance/

the participants stated they had seen fake news headlines while 8% also believed them [4]. According to the authors, Democrats, heavy media consumers, people with higher education, and of higher age tend to "have more accurate beliefs about news" [4].

Sängerlaub [3] conducted a representative survey of 1,037 participants shortly after the German parliamentary elections in 2017. His results show that 61% of the participants had the impression that there were many cases of fake news during the election campaign. Interestingly, those who voted for the right-wing, populist party AfD agreed more to this statement than others (71%). Regarding fake news dealing with migration, right-wing supporters were often found to believe them. Besides partisanship, other factors like gender, age, income, and education had less influence on the results [3]. Lewandowsky et al. [27], [28] follow the assumption of ideology being a decisive factor, focusing on correlations between perceptions of fake news and worldviews. Reuter et al. found that 73% of the German population perceive false rumors in social media as a barrier for its use in emergencies [29].

Regarding the question of how to counteract fake news, Lewandowsky et al. [27] focused on building new narratives based on their examination of psychological dynamics with respect to the interaction with (fake) news. Other scholars introduced tools useful for detection and the individuals' ability to assess news as untrustworthy [30–32]. A study by Neudert [33] on the issue of computational propaganda in Germany revealed a rise in junk news generated by social bots in the context of "the skeptical political zeitgeist" [33] in Europe. The authors further suggest junk news often to be disseminated by right-wing populist actors.

2.3 Research Gap

We aim for a deeper understanding of the highest populated and economically important European country with respect to fake news. While the country's discourse is marked significantly less by fake news than debates around US elections are [34], it has, like many other societies, experienced a polarization of political attitudes in recent times, introducing the issue and providing fertile ground for the creation of fake news [35]. While a few studies have investigated fake news in Germany concerning specific election events [3], [34], there are no studies that analyzed the perception of fake news in Germany independently of specific events. With respect to possibilities of counteraction, we offer a first glance at a population's general opinion on this issue. Reviewing related work, we propose to encounter the lack of research about citizens' perceptions of countermeasures. These findings may contribute to the development of practical policies, as the success of ICT governance strongly depends on the willingness of non-state actors [36]. This may prove to be relevant as German decision-makers have been active in this field, introducing the Network Enforcement Act. We suggest our analysis to be helpful as survey answers are analyzed by both demographic and ideological characteristics, valuably pointing out different degrees of sensitivity in perception. Our findings concerning Germany's population may not only be useful with respect to this single case but contribute to an understanding of fake news interaction in other European countries with similar media-cultural conditions and political polarization [34]. Instead

of following US case studies and their binary ideological categorization of left- (Democratic) or right-wing (Republican) partisanship, we analyze the survey results according to demographic factors considered relevant by the surrounding academic discourse and test for correlations corresponding to ideological statements.

3 Approach

We intend to give an overview of the situation of fake news in Germany by finding answers to questions of attitude, interaction, and counteraction with respect to fake news. For these three topics, we also investigate differences between demographic subgroups and ask for correlations with more general attitudes regarding perceived threats to peace. To find answers to these questions, we conducted a representative survey of adults in Germany and analyzed the results. Using data of a representative survey, we compile a descriptive quantification about the belief of Germans.

3.1 Survey Design

We conducted a representative online survey (N=1023) of the adult German population in July 2017, using the ISO-certified panel provider GapFish (Berlin). They guarantee panel quality, data quality, and security, as well as survey quality through various (segmentation) measurements for each survey within their panel of 180,000 active participants. Our overall survey included 30 questions and also covered other topics, such as [37], [38]. In this work, we investigated three survey questions targeting the subject of fake news and selected on the basis of previous work. Each question consisted of multiple items which were answered on a three- or five-step Likert scale (see Appendix). The first question aimed at participants' attitudes towards fake news and their ramifications. The ten items comprised statements about fake news, which participants had to agree or disagree with on a five-step Likert scale. For example, the statements were about fake news posing a threat, or influencing public actors and population. In the second question, we asked whether and how participants had contact with fake news. On seven items, they had to state, among others, if they have perceived, liked, commented on, shared or created fake news on a 3-step Likert scale. Additionally, we asked for their opinion regarding the handling, i.e., counteracting of fake news. Participants were told to assess six suggested approaches to counteract fake news responding on a 5-step Likert scale. We selected several additional question items which we expected to hold interesting relations to fake news, including demographic positions and ideological statements.

3.2 Characteristics of Survey Participants

The conducted survey is representative of the German population stratified according to gender, age from 18 to 64 years, and federal state. This means that on these variables, the collected data shows no significant differences from the target population. Furthermore, we ensured a wide spread of the survey sample in terms of education and income

which could not be tested for representativity due to the lack of appropriate national statistics. The χ^2-test on gender reveals no significant differences to the German population between 18 and 64 years (χ^2 (df= 1) = 0.031, p= .860). The collected sample consists of 50.4% male and 49.6% female participants (Germany: 50.7% male and 49.3% female) and, therefore, is representative. The participants' age was gathered in groups of 18 to 24 years, 25 to 34 years, 35 to 44 years, and 45 to 54 years. All group sizes correspond to the target population (χ^2 (df= 4) = 1.928, p= .749). We precluded one participant from analysis who stated to be 65 years or older, thus analyzing answers of 1,023 participants. Also, all sixteen German federal states are represented proportionately (χ^2 (df= 15) = 3.832, p= .998). Survey participants were paid a small allowance, recruited online, and able to take part once via the research agency's platform.

Most of all participants stated using a smartphone on a daily (49%) or hourly (43%) basis. Facebook is used less frequently than smartphones. A large majority (67%) does not use Twitter at all. Instagram is less popular than Facebook but more popular than Twitter, with 24% using it daily or hourly. All items concerning smartphone and social media use are highly influenced by the age of the participants (e.g., χ^2 (df= 4) = 195.2, p= .0000 for smartphone use), with younger respondents being more active.

3.3 Analysis

We examined the obtained survey data using R for data preparation and statistical methods, and Tableau for visual analytics and creation of data figures. For each question, we calculated the basic frequencies and created Diverging Stacked Bar Charts. Significant differences between participants of different demographic groups were determined using χ^2-tests of independence. Further, we investigated relationships to selected items of the extended question catalog. We calculated the Kendall rank correlation coefficient (Kendall's τ) for each pair of items, forming a correlation matrix and tested the correlations for non-zero coefficients.

4 Empirical Results

4.1 Attitude towards Fake News

The responses show that a large majority of participants concedes the risks of fake news (see Fig. 1). More than 80% agree that fake news poses a threat and can manipulate the population's opinion. But almost the same number of participants believes that public players like politicians can be manipulated as well. 78% see fake news harming democracy. In contrast, there are fewer (but still a significant amount of) people who see a threat in social bots and state censorship. Furthermore, there is a large number of participants who are indecisive about social bots. About 24% believe that fake news is annoying but does not pose a threat. There is no clear tendency, and there are widespread answers to the question of fake news being a pretext to fight system-critical actors. Most of the participants (82%) see the platform operators responsible for preventing fake news. 70% believe it is the state's task.
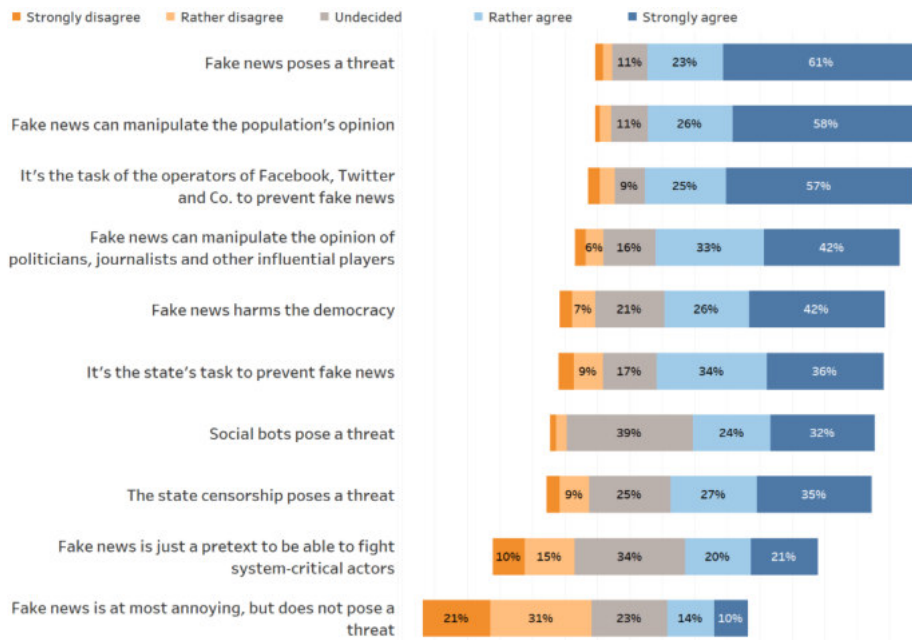
Fig. 1. Responses to the ten items of the first question ("Please indicate to what extent you agree to the following statements on fake news"). The responses are visualized in a *Diverging Stacked Bar Chart.* The level of agreement on an item is indicated by the horizontal shift.

Demographic Aspects. There are significant differences between female and male participants on several items: While about half of all women (47%) are undecided about a threat of social bots and 50% agree (or strongly agree) on it, male participants are more decisive (χ^2 (df= 4) = 34.168***[2], τ = -0.100***). 37% of male participants strongly agree (and 24% agree), and only 31% are undecided. There are also more male participants who disagree with it (7% male and 3% female). Regarding the threat of state censorship, men agree with this statement more strongly than women (41% vs. 29%, χ^2 (df= 4) = 25.394***, τ = -0.071*). Female participants clearly agree, that it is the state's task to prevent fake news (74%, disagree 9%, χ^2 (df= 4) = 21.029***, τ = 0.103***). Men are less consensual (65%) and more hostile (18%) to this statement. Most female participants are undecided (40%) whether fake news is just a pretext to fight system-critical actors (χ^2 (df= 4) = 24.366***, τ = 0.031). Male participants are less undecided (29%) and more disagreeing (30% vs. female 20%). However, there are fewer female participants who strongly agree (18% vs. male 23%) and more who just agree than men (22% vs. 18%). Furthermore, there are significant differences between different age groups on this item (χ^2 (df= 16) = 33.63**, τ = 0.065**). Older participants are less undecided than younger ones (e.g., 30% of 55 to 64 years vs. 40% of 25 to 34 years). The group of 55 to 64 years is also more disagreeing on this item than others (34% vs.

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[2] (p<.001)***;(p<.01)**; (p<.05)*

15% of 18 to 24 years). In addition, the youngest group (18 to 24 years) is more agreeing than others (51% vs. e.g., 37% of 25 to 34 years).

The educational level has an important impact on many questions. For example, on the item of social bots (χ^2 (df= 20) = 65.714***, τ = 0.095***), participants with a university degree or university of applied sciences degree are mainly strongly agreeing to a threat of social bots (43%). However, participants with a high school diploma or secondary school degree are mainly undecided (38%, 47%). The item of social bots is also influenced by income (χ^2 (df= 12) = 23.864*, τ = 0.062*) which slightly correlates with educational level: Kendall's τ = .0748**. The majority of those with an income of more than €3,500 strongly agree that social bots pose a threat. Other income groups are mainly undecided (38% to 41%).

Correlations with Additional Survey Items. The correlation matrix generally revealed a high number of significant relationships while we consider only the most significant and compelling links to other survey items. We found that the question about the assessment of social media advice had significant non-zero coefficients especially for the item of correcting wrong information ("When you find or share wrong information, correct it."). This item correlates to multiple items about fake news: For example, the response on this item has influence on responses towards fake news posing a threat for democracy (τ = .21***, z = 7.87). There also is a quite strong connection to stating that fake news manipulates the population's opinion (τ = .31***, z = 11.10). A smaller (but still significant) link can be found regarding fake news manipulating the opinion of politicians, journalists and other influential players (τ = .23***, z = 8.65). The item stating that "all information controlled by the state should be made publicly available, even if posing a risk to public safety" shows a correlation with the attitude towards fake news being at most annoying and not posing a threat (τ = .21***, z = 8.45). Similarly, they rather disagree with the item stating that fake news poses a threat (τ = −.13***, z = −4.93) and they more often think that fake news is just a pretext to fight system-critical actors (τ = .18***, z = 7.20). We could also find a negative link to the item of fake news manipulating the population's opinion (τ = −.15***, z = −5.58) and another negative coherence regarding the responsibility of social media operators to prevent fake news (τ = −.11***, z = −4.10). On the items about what poses a threat to the peace in Germany, the analysis revealed some significant correlations. Seeing other states as a threat to peace is positively correlated to assessing fake news posing a threat (τ = .12***, z = 4.65) and harming democracy (τ = .10***, z = 3.84). We found a similar connection to the threat of social bots (τ = .10***, z = 3.75). Interestingly, a threat of social bots correlates with seeing a threat in nationalism (τ = .19***, z = 7.29). The items on the threat of nationalism and capitalism also show a significantly positive coefficient on fake news harming democracy (τ = .21, ***, z = 7.82 and τ = .10***, z = 3.82). There also might be an opposing link between the item of multicultural coexistence posing a threat to peace and the item regarding a threat of fake news (τ = −.08**, z = −3.06). Furthermore, the analysis revealed correlations with the statement that fake news is just a pretext to be able to fight system-critical actors: There are significantly positive coefficients for the item on a threat of globalization (τ = .21***, z = 8.14) and other states (τ = .19***, z = 7.50).

4.2 Interaction with Fake News

While almost half of all participants (48%) stated they had perceived fake news, the majority says they had not interacted with fake news in any of the suggested ways (see figure 2). In general, the number of participants who affirm interaction with fake news is between 23% ("deleted or reported fake news") and 2% ("created fake news"). The responses of *only* those participants who have perceived fake news are slightly higher: There are 38% saying they have deleted or reported fake news and 23% who affirmed commenting and disliking fake news, respectively. About 7% state they had shared fake news and 4% say they had created fake news themselves. However, due to the social desirability bias, these numbers are probably not accurate and might be higher. Since fake news has a negative social standing, not everyone would respond honestly and admit e.g., sharing or creating fake news.
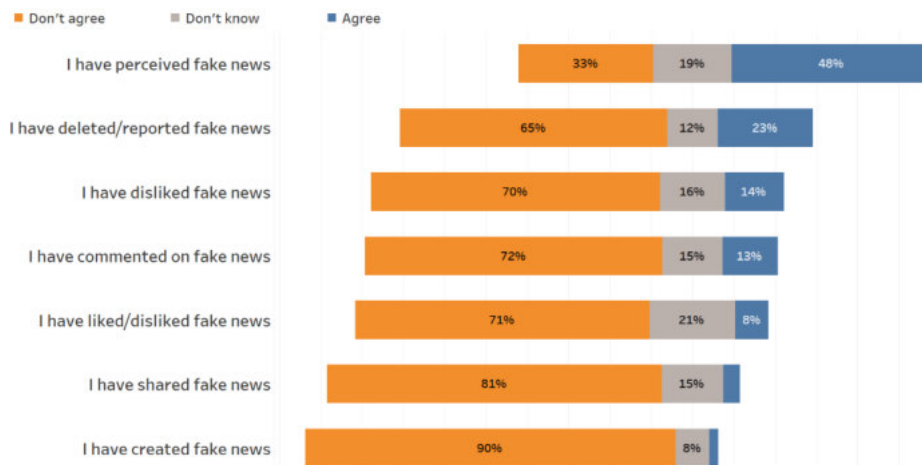

Fig. 2. Responses to the seven items of the second question ("How did you have contact with fake news on social networks?").

Demographic Aspects. Regarding gender, there are no significant differences in interaction with fake news. However, age has an important impact on most questions. For example, 63% of the participants aged 18 to 24 and 59% aged 25 to 34 say they have perceived fake news while only 33% of participants aged 55 to 64 agree (χ^2 (df= 8) = 52.356***, τ = 0.140***). Additionally, younger participants are more likely to have liked, disliked (τ = 0.021) or commented (τ = 0.044) on fake news. Furthermore, younger participants stated significantly more often than older participants to have deleted or reported fake news (46% aged 18 to 24 vs. 11% aged 55 to 64, χ^2 (df= 8) = 78.881*** τ = 0.149***). The educational level corresponds significantly with the perception of fake news (χ^2 (df= 8) = 37.012***, τ = 0.141***, ignoring the minority without graduation) but not with the interaction with it. 67% of participants with a university degree state to have perceived fake news while only 41% of participants with a secondary degree agree. A significant impact of income on the interaction with or perception of fake news could not be shown.

Correlations with Additional Survey Items. Again, we found several links to additional survey items using rank-based correlation. Unsurprisingly, items on social media usage show a correlation with the interaction with fake news. For example, posting messages on social media correlates with commenting on ($\tau = .22^{***}$, $z = 7.88$), sharing ($\tau = .12^{***}$, $z = 4.29$) and reporting ($\tau = .20^{***}$, $z = 7.30$) fake news. Thus, a higher activity in social networks often comes along with more interaction with fake news. A possible (but weak) indicator for the item on fake news creation is the belief that globalization is a threat to peace ($\tau = .08^{**}$, $z = 2.92$). Responses to the item on public safety having priority over information access show a minor correlation to the item about perceiving fake news ($\tau = -.06^{*}$, $z = -2.19$). In contrast, the item on unrestricted information access shows a significantly positive coefficient to the item on fake news creation ($\tau = .13^{***}$, $z = 4.57$).

4.3 Counteracting Fake News

Most participants agree with all suggested ways to deal with fake news (see: figure 3). For all items, the numbers of participants who agree vary between 80% ("quick reactions of the authorities") and 72% ("establish state IT centers of defense"). The amount of neutral responses ranges from 14% to 21%, while very few participants do not agree with the suggested approaches (between 3% and 7%). Compared to the other items, the idea of a state IT center managing fake news has the lowest compliance. It has the lowest number of supporting answers and the highest numbers of neutral and disagreeing answers. However, the reported deviations are altogether relatively small. For gender, age, educational level, and income, no significant differences could be found in the answering patterns.
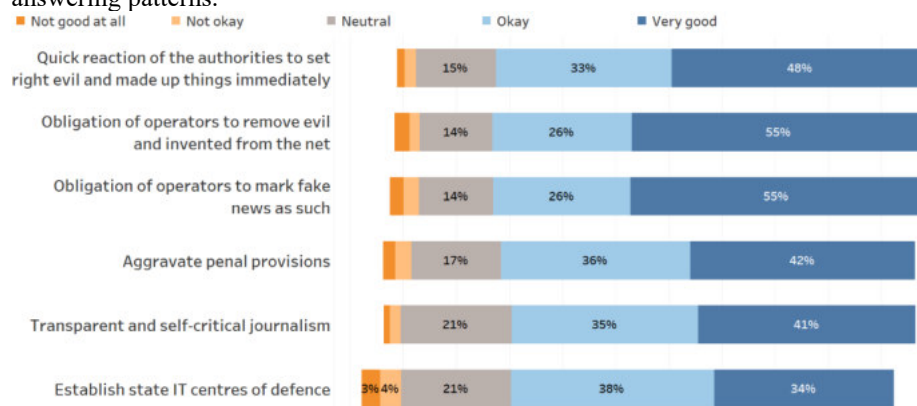

Fig. 3. Responses to the six items of the third question: ("How do you rate the following suggestions for dealing with fake news?"), visualized in a Diverging Stacked Bar Chart.

Correlations with Additional Survey Items. The correlation revealed significant connections to the items on an obligation of operators to remove fake news and to mark fake news as such. The social media advice on correcting false information has positive coefficients towards obligation to remove fake news ($\tau = .36^{***}$, $z = 13.11$) and to mark

fake news ($\tau = .34^{***}$, $z = 12.38$). The same links can be found for the advice to verify information before publishing (obligation to delete fake news: $\tau = .41^{***}$, $z = 14.65$ and obligation to mark fake news: $\tau = .39^{***}$, $z = 13.89$).

5 Discussion and Conclusion

5.1 Scientific Contribution & Policy Implications

In sum, the analysis has shown that a large majority of participants concedes the risks of fake news. More than 80% of the participants agree that fake news poses a threat, and 78% see fake news as harming democracy. Even though almost half of all participants (48%) stated that they had perceived fake news, the majority claims not to have interacted with them in any of the suggested ways. Only 2% admitted having created fake news. Moreover, most participants agreed with all suggested ways to deal with or counteract fake news.

We analyzed survey results with respect to common demographic factors. While studies did not make any differences between male and female respondents, we point out to respective diverging attitudes [39], with women stressing the state's responsibility to deal with fake news and men increasingly pointing out to the danger of state censorship. Our results propose future policy-making to be sensitive towards this issue by ensuring to enhance a more differentiated view considering *gender*. Yet, one may put this into perspective, as our findings do not suggest a correlation between gender and any item regarding interaction or counteraction with respect to fake news. The same applies for *income* as a potential factor. Further, we can assume only the highest income group, slightly correlating with education, to be critical of social bots. Thus, to allow for overall informed opinions and decisions regarding fake news, it may be useful to raise awareness to this phenomenon. In contrast, *age* and *education* influence not only attitudes regarding fake news but also people's considerations of interaction with them. Our findings support the view of younger and relatively educated people being more informed and sensitive about fake news due to their relatively frequent and differentiated internet usage, contradicting other studies [4]. Thus, educational approaches may specifically target older generations and focus on easy and appealing access to necessary information [40]. Yet, it should be kept in mind that across correlations between demographic factors and survey items, we could mostly make out only small effects.

We analyzed respondents' answers according to ideological motives, testing for correlations with statements reflecting perceived threats. Respondents who believed globalization to pose a threat to peace in Germany also shared the attitude of perceiving the phenomenon of fake news used as a pretext to fight system-critical actors and showed a weak link to the action of creating fake news. Following Starbird's assumption of online anti-globalist narratives being often (re-)produced by nationalist populist groups [25] and the findings of Allcott et al. [4] pointing out to right-wing or republican ideology as a motivation for creating fake news, we suggest both the creation and playing down of fake news to potentially symbolize the respective populist political view. Similarly, respondents who possibly downplayed fake news to be no threat and just an excuse to fight against system-critical actors perceived multicultural coexistence to be

threatening. This fits with Sängerlaub's result on AfD-related appreciation of fake news [3]. Future regulative implementations might, therefore, reflect awareness of diverging attitudes across political camps. Our findings also indicate German respondents to not associate fake news with mainstream media as apparently as in the US, diverging from study results focused on the immediate aftermath of elections [3]. Respondents who perceived nationalism as well as capitalism to pose a threat also found fake news to harm democracy while the first group also perceived social bots to be problematic, suggesting relatively left-wing or liberal respondents to be more critical of fake news. Assuming a perceived dualism of freedom and security, respondents who prioritized unrestricted access to information over public safety shared the attitude of fake news not posing a threat and legitimizing actions against system-critical actors as well as showed to be responsible for the creation of fake news. Participants who prioritized public safety demanded control with respect to fake news by social media operators. Policies may consider this regarding burden-sharing. Again, effects between ideological standpoints and survey items were not great, yet, stronger relationships compared to demographic factors and items were proposed.

5.2   Limitations & Future Work

This work has limitations: (1) Our results were acquired using a survey. This method of data collection implies the risk of participants being more technophile, not responding honestly, being influenced by social desirability biases, which is very likely on such a controversial topic. To find more reliable numbers, other techniques than a survey need to be utilized. (2) Furthermore, the study relies on self-reported behavior. It is likely that people interact with fake news without knowing it. (3) Also, it must be mentioned that the concept of fake news – as a result of the term's ambiguous nature and changing meaning in the current political and societal discourse – might have been interpreted differently by each survey participants. (4) Also, the correlations to other survey items are all lower than $\tau = .5$ and thus, cannot be considered strong. However, although the given correlations are weak, they are statistically significant and reveal existing tendencies. (5) Our panel excluded teenagers younger than 18 years; a group which might have yielded important results regarding the perception of fake news. Future research may test for correlations between the three respective topics to gain deeper insight into causal relationships between general perception, perceived interaction and opinion on counteraction while targeting various groups defined by demographic and ideological factors. Worldview-related variables may contribute to a more accurate understanding of variations in perceptions regarding fake news and of a diversity of fake news conceptions.

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Appendix: Survey Questions

#15) Attitude towards Fake News. Please indicate to what extent you agree to the following statements on fake news. (strongly agree, rather agree, undecided, rather disagree, strongly disagree): *1. Fake news poses a threat. | 2. Social bots pose a threat. | 3. It's the state's task to prevent fake news. | 4. It's the task of the operators of Facebook, Twitter and Co. to prevent fake news. | 5 Fake news harms the democracy. | 6. Fake news can manipulate the opinion of politicians, journalists and other influential players. | 7. Fake news can manipulate the population's opinion. | 8. Fake news is just a pretext to be able to fight system-critical actors. | 9. The state censorship poses a threat. | 10. Fake news is at most annoying but does not pose a threat.*

#16) Interaction with Fake News. How did you have contact with fake news on social networks? (agree, don't know, don't agree): *1. I have perceived fake news | 2. I have liked/disliked fake news | 3. I have commented on fake news | 4. I have shared fake news | 5. I have deleted/reported fake news | 6. I have disliked fake news*

#17) Dealing with Fake News. How do you rate the following suggestions for dealing with fake news? (very good, okay, neutral, not okay, not good at all): *1. Establish state IT centers of defense | 2. Aggravate penal provisions | 3. Transparent and self-critical journalism | 4. Quick reaction of the authorities to set right evil and made up things immediately | 5. Obligation of operators to remove evil and invented from the net | 6. Obligation of operators to mark fake news as such*

Further questions:

#1) Please state how often you perform the following activities. (hourly, daily, more than once a week but less than daily, less than once a week, never): *1. Using a smartphone | 2. Using Facebook | 3. Using Twitter | 4. Using YouTube | 5. Using other forms of social media | 6. Posting messages to social media*

#13) In your opinion, should federal authorities in Germany have the right or not to guarantee public safety? (definitely yes, rather yes, neutral, rather no, definitely no): *1. All information controlled by the state should be made publicly accessible, even if posing a risk to public safety. | 2. The public safety should have priority, even if this restricts the access to information controlled by the state.*

#18) In your opinion, what poses the greatest threat to peace in Germany? (very great, great, neutral, little, very little): *1. Other States | 2. Nationalism | 3. Multicultural coexistence | 4. Climate change | 5. Social injustice | 6. German politics | 7. Left-wing extremism | 8. Religious fanaticism | 9. Capitalism | 10. Globalization*

#23) How do you assess the following advice for using social media during crisis situations? (very important, rather important, neutral, rather unimportant, very unimportant): *1. When you find or share wrong information, correct them.*

#25) How do you assess the following aspects of social media usage during crisis situations? (strongly agree, agree, neutral, disagree, strongly disagree): *1. You are responsible for your postings, please consider possible consequences. | 2. Verify your information before publishing.*