When debates break apart:

Discursive polarization as multi-dimensional divergence emerging in and through communication

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Abstract

'Polarization' is a common diagnosis of the state of contemporary societies. Yet, few studies theorize or systematically analyze how polarization evolves in media content. To guide future empirical studies, we introduce a public sphere perspective on polarization. *Discursive Polarization*, defined as divergence emerging in public communication, may disrupt the public sphere if left untamed. Its analysis should combine the study of ideological polarization (increasing disagreement about issues) and affective polarization (growing disaffection between groups) as evolving in communication. Both processes may be measured in media content. We propose a framework combining the study of journalism and digital communication networks, looking (1) at content and (2) at networked interactions regarding both political issues and social identity formation. Exploring how the public sphere is disrupted in the process of *Discursive Polarization* may help us to understand the wider social phenomenon of polarization: before societies break apart, debates break apart.

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1. Introduction

"Democracy in America" (Tocqueville, (1997 [1835]), once an admired model, has seemingly become an example of how societies are drifting apart, with Donald Trump becoming the posterchild of the "polarizing figure" (Slater & Arugay, 2018). While the United States may be an extreme case, indications of polarization can also be observed in other countries in highly contentious debates around the COVID-19 pandemic, climate change, or migration. Among the wealth of studies on polarization, only a few explore media content, particularly concerning traditional news media (Kubin & Sikorski, 2021). Nevertheless, journalism and (social) media communication constitute important arenas within which polarization manifests and may gain momentum. This is why we will provide an analytical framework for studying *discursive polarization*: *how polarization emerges and can be measured in mediated public communication*.

Early research on polarization was criticized for providing "strikingly little guidance in defining it" (DiMaggio et al., 1996, p. 692). Yet, even today, with a wealth of research referring to the concept, two-thirds of studies systematically reviewed by Kubin/Sikorski (2021) lacked an explicit definition of polarization.

We suggest defining polarization broadly as *a multi-dimensional meta-process of social divergence*. It is thus a concept of analyzing society at large, concerning both political actors and the broader public (e.g. Lelkes, 2016; Levendusky, 2009). We take the term's suffix "-ization" seriously in the sense that the concept should be understood as a *process*. Additionally, *different dimensions* of polarization need to be considered (Kubin & Sikorski, 2021; Wilson et al., 2020;

only few studies try to integrate the different dimensions, e.g.: Yarchi et al., 2020). Much of the early research was focused on *ideological polarization*: the divergence of attitudes towards issues (issue polarization, ideological polarization, attitude polarization, e.g., DiMaggio et al., 1996; Fiorina & Abrams, 2008; Harris et al., 2014). More recent scholarship has argued for studying a*ffective polarization.* Its main feature is increasing dislike towards the outgroup, most often studied with a focus on Republican and Democrat partisans in the United States (e.g., Druckman & Levendusky, 2019; Iyengar et al., 2018; Iyengar et al., 2012).

Whether polarization harms society and democracy depends on its degree: if limited in time and social reach, and to certain topics, divergence and contention may just be part of the democratic process. If left untamed, however, polarization may ultimately break the democratic public sphere apart. This form of "pernicious polarization" (McCoy & Somer, 2018) is "a process whereby the normal multiplicity of differences in a society increasingly align along a single dimension and people increasingly perceive and describe politics and society in terms of 'Us' versus 'Them'." (McCoy et al., 2018).

The point of this understanding of polarization as an ambivalent, multi-dimensional process is to caution against diagnosing a dangerously polarizing society while having analyzed only one aspect of it. This applies also to our own analysis of polarization as arising from and reflected in public, mediated communication. Nevertheless, we insist that discursive polarization is an important driver of the polarization of the minds of individuals and wider interactions in society. Therefore, we will now open up a public sphere perspective on polarization.

2. Discursive polarization as disruption of the public sphere

Polarization ultimately manifests in individuals' diverging attitudes about issues and disaffection towards perceived out-groups. "Polarizing Figures" (Slater & Arugay, 2018) may exploit

"foundational rifts" in the respective society or address newly emerging grievances or conflicts in society (McCoy & Somer, 2018). In any case, for such polarizing dynamics to take place, different actors and publics need to be interconnected through communication. Long before digital social networks existed, the public sphere was conceptualized as a *network* of arenas of communication (Ferree et al., 2002b, p. 11; Hilgartner & Bosk, 1988). Jürgen Habermas called this web of connections the public sphere: "The public sphere can best be described as a network for communicating information and points of view […]; the streams of communication are, in the process, filtered and synthesized in such a way that they coalesce into bundles of topically specified public opinions" (Habermas, 1996, p. 360). It is in this network of communication where interactive dynamics of polarization emerge or are contained. Just as this process of *discursive polarization* is rooted in social processes and contexts beyond mediated communication, it also affects society beyond mediated communication.

The ideal of an integrated public sphere

The basic idea of a public sphere, as introduced by Habermas (1989, 2006) is "an arena in which citizens discuss matters of common concern" (Wessler, 2018, p. 13). While a pluralistic society will always consist of different publics and arenas of discussion, the public sphere is the web of connections between them that integrates society (Calhoun, 1992, p. 37).

The normative purpose of Habermas's public sphere is to enhance mutual understanding in society, ultimately improving the performance of democratic policymaking through public reasoning. This process is based on discursively negotiated common interpretations about the relevant facts (truth), values and trust in the general honesty of the interlocutor (Habermas, 1987; Wessler, 2018). The democratic output of the public sphere is *not* consensus but a shared set of competing and conflicting public opinions (Habermas, 2021). In the context of research on transnational public spheres in Europe (e.g. Koopmans & Statham, 2010; Risse, 2010; Wessler

et al., 2008), scholars have established useful criteria for assessing whether an integrated public sphere exists. These criteria include common topics and cross-references, as well as the perspective of being a participant in a common debate. A public sphere is a "community of communication" (Risse, 2010) (as summarized in Brüggemann & Wessler, 2014, 399-340).

We find it helpful to connect the idea of an integrated public sphere to Dan Hallin's idea of three spheres of debate (1986, 116/117). Hallin distinguishes (1) the sphere of ideas that actors in public discussion will not question (consensus), (2) the sphere of ideas that are considered eligible for public discussion (legitimate controversy), and (3) the sphere of ideas that will be filtered out of public debate (deviance). Different groups and actors in an integrated public sphere can agree roughly about which topics belong to which sphere.

An integrated public sphere, as characterized here, is not the description of a historical reality but an ideal type that is, nevertheless, rooted in reality (Habermas 2021). Real types of public spheres will always be more or less integrated and dynamic. Integration is achieved discursively through constant debate about what constitutes a deviant opinion or a legitimate topic for discussion.

Habermas' deliberative model of the public sphere has inspired criticism and alternative conceptions. The different models emphasize different key values in public communication and cannot be fully discussed here (but see e.g.: Ferree et al., 2002a; Wessler, 2018, p. 70). For our purposes of opening up a public sphere perspective on polarization, however, it is important to mention that different conceptions will diverge in how they normatively appraise the process of polarization. E.g., the dissociation of the public into oppositional parts that is at the heart of the process of polarization can also be characterized as the formation of "counterpublics" (Fraser, 1990). Assessing the role of these counterpublics is difficult because they can provide a much-needed counterweight for views that are underrepresented in the dominant discourse, but can also provide a breeding ground for extreme, anti-democratic attitudes. Notably, Mouffe's

(1999) concept of agonistic pluralism emphasizes the value of conflict for democracy, not only as reasoned civil disagreement but also as social groups clashing in an us-vs.-them conflict that will not be resolved by discourse.

Yet, even in the model of agonistic pluralism, polarization might lead to a – normatively undesirable – tipping point where adversaries who still accept each other as participants in a common debate and who share basic democratic principles (agonism) become enemies who must be defeated by all means (antagonism). Identifying the tipping point between a degree of polarization as a mobilizer of democratic debate and as a harmful disruption to democracy, is a matter that depends on one's normative model of a democratic public sphere.

The disruption of the public sphere

In sharp contrast, particularly to the deliberative ideal, scholars diagnose "disrupted public spheres" (Bennett & Pfetsch, 2018). The media, understood as both comprising news media and social networks, may contribute to this disintegration of the public sphere. Habermas even diagnoses a new structural transformation through the emergence of digital media, leading to a fragmentation of the public sphere (Habermas, 2021). At the endpoint of such a process of discursive polarization, society would be split up into different and largely separated communities of communication that regard radically different ideas as consensus, as part of legitimate debate, and as being beyond legitimate discussion (see Figure 1).

Going beyond the model of Dan Hallin and adding the dimension of affective polarization to the picture: different groups would no longer regard each other as adversaries in a common debate but as lunatics that are not worth talking to or enemies that need to be defeated.
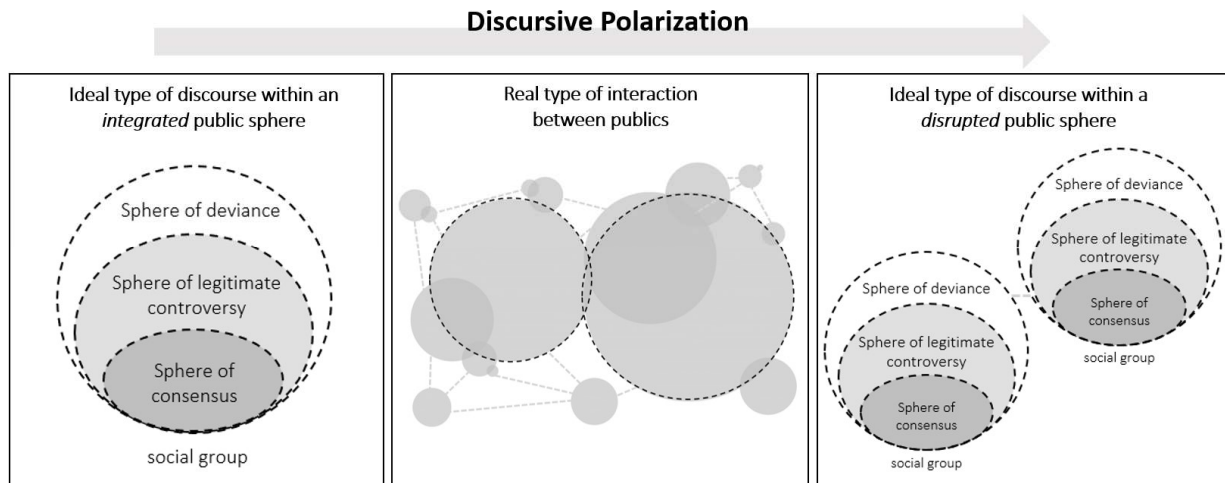
Discursive Polarization

| Ideal type of discourse within an *integrated* public sphere | Real type of interaction between publics | Ideal type of discourse within a *disrupted* public sphere |

Sphere of deviance

Sphere of legitimate controversy

Sphere of consensus

social group

Sphere of deviance

Sphere of legitimate controversy

Sphere of consensus

social group

Sphere of deviance

Sphere of legitimate controversy

Sphere of consensus

social group

Figure 1. Discursive polarization as disrupting public spheres

3. The role of journalism and digital media networks

Journalism and social media constitute public arenas with certain affordances, such as routines of journalism and the structural features of digital platforms (e.g., algorithms governing news feeds). Both may enhance or contain polarization by privileging certain types of content. User interactions also contribute to this through "networked gatekeeping" (Gallagher et al. 2021).

Media content may fuel a *self-fulfilling prophecy of polarization.* False meta-perceptions about different groups add up to "false polarization": misperceptions about the degree of actual divergence between different groups (Fernbach & van Boven, 2022), see also (Bail et al., 2018; Grover et al., 2019; Lelkes, 2016; M. Levendusky & Malhotra, 2016). Media content, thereby, may simultaneously produce both groups of "moralized, sociopolitical tribes" (Fernbach & van Boven 2021:3) and stereotypes of opposing groups as irrational, biased, and a threat to society (Hoffarth & Hodson 2016, Schwalbe et al. 2020).

We will start by discussing the basic state of research on *social networks*, as this has been a major focus of recent research that explicitly addresses the topic of polarization. Famously, Sunstein hypothesized that digital media networks are effectively representing like-minded

"echo chambers," leading to further "group polarization," a process whereby "groups of like-minded people engaged in discussion with one another will typically end up thinking the same thing they thought before—but in a more extreme form" (Sunstein, 2017, p. 68). The idea of polarizing echo chambers has inspired a wealth of research which today allows us to paint a more nuanced picture of a largely ambivalent role of social networks (Barberá et al., 2015), often reflecting high degrees of polarization (Landoli et al., 2021), but not in the way assumed by the echo chamber hypothesis that has been challenged frequently (Bruns, 2019; Törnberg, 2022).

Studies find that digital networks do tend towards homophily (Landoli et al., 2021), but that they hardly constitute closed off echo chambers (Barberá, 2020) and sometimes even feature intensive intergroup contact (van Eck et al., 2021; Walter et al., 2017; Yarchi et al., 2020). Cross-cutting interactions with opposing groups exist, particularly in political discourses and between politically-interested users (An et al., 2019; Wu & Resnick, 2021).

Yet, in contrast to face-to-face social interaction (Balietti et al., 2021; Branković et al., 2020), intergroup-contact through digital media networks often fosters polarization, at least in the context of political debates (Banks et al., 2021; Barberá, 2020; Zhang et al., 2022). Experimental approaches show e.g. how distorted meta-perceptions of outgroups as represented on digital platforms can result in disaffection towards outgroups (Bail et al. 2018, Banks et al. 2021).

Therefore, mediated interactions across ideological camps do not necessarily have the beneficial effects hoped for by Sunstein (2017). They may, on the contrary, lead to "mutual group polarization" (Brüggemann et al., 2020) and strengthen the formation of "counter-publics" (Jonas Kaiser & Puschmann, 2017). Unlike echo chambers, counter-publics observe and refer to mainstream publics, but these connections should not be understood as dialogue taking place. Different groups may actually observe and refer to each other rhetorically, but they may thereby

re-affirm and amplify their negative view of "the other" in order to construct themselves as a superior alternative (Rauchfleisch & Kovic, 2016).

Thus, research on social media supports Habermas' (2021) observation of semi-permeable publics ("Halböffentlichkeiten", p. 297) that discursively revolve around themselves while at the same time referring in a dismissive tone to their communicatively constructed others.

Hostile interactions are driven by the "Social Media Prism," generating higher visibility of the more extreme voices from the presumed outgroup and muting moderate voices (Bail, 2021). Within digital social networks, the role of "highly visible partisan individuals" (Barberá 2020: 37) thus becomes central. In political discussions within the (English-speaking) Twittersphere, ten percent of users are responsible for more than ninety percent of the content distributed (Pew Research Center 2020).

It is precisely these very active partisan users that are found to be responsible for the perceived dominance of misinformation and incivility (Dourado & Salgado, 2021) and the polarization of social media networks (Johannes Kaiser et al., 2022). Osmundsen et al. (2020) showed that the (re-)distribution of disinformation is fueled by anti-outgroup-sentiment: "individuals who report hating their political opponents are the most likely to share political fake news" (p. 1).

Journalism, just like social media networks, first reflects polarization by giving social actors a voice that they might use in polarized and polarizing ways.

In the U.S., this is already visible in studies that reconstruct differences in language. Chinn et al. (2020) investigated the coverage of climate change published in American newspapers from 1985 to 2017 using the one-dimensional Wordfish scaling model. They find increasingly distinct language use by Republican and Democrat politicians (for similar findings in research on audience comments on CNN and FOX Youtube videos, see KudhaBukhsh et al. (2020)).

Going beyond the idea of journalism as an arena of political actors, there are certain news logics rooted both in professional norms of journalism and the commercialization of the hybrid, multi-channel media system. Technological advances enable multiple media outlets to target politically defined audiences. Thus, there is a commercial incentive to feed the confirmation bias of partisan audiences. Gustafson et al. (2019) surveyed users of Fox News and MSNBC in a panel study asking about the environmental policy initiative labeled "the *Green New Deal.*" Frequent use of the right-wing Fox News channel predicted stronger opposition to the Green New Deal among the Republican audience. Fox News also polarized the other side: incivility on Fox News polarized mostly the Democrats viewing the channel in a survey experiment (Druckman et al., 2018). In the world outside the lab, Democrats might not view all that much Fox News, but they will still find out about the most extreme statements on Fox News as they circulate through social media networks.

As Fletcher et al. (2020) show, other countries feature more *forum media* than the United States: outlets that are read or watched by audiences from different political backgrounds, thus preserving relatively neutral arenas of exchange in the public sphere. However, even this type of news outlet might polarize their audiences through emphasis on extreme voices and conflict as important news factors (see the empirical evidence of this for the role of balanced reporting, further down below).

Media content feeds into the confirmation bias of audiences who select consonant content, process content selectively, and engage in counterarguing if content contradicts one's convictions. Thus, Wojcieszak et al. (2018) tested whether mere exposure to news (related to the European Union) polarized audiences. They find that it does not polarize everyone, but that it amplifies extreme views among those media users who already held somewhat extreme views before.

Mirroring the social media prism mentioned above, journalism may thus provide extra visibility to extreme voices and crowd out the moderates. There is evidence for this in the United States: extreme advocacy groups received more visibility in newspapers than moderate groups (McCluskey & Kim, 2012), as did extreme (conservative) Members of Congress in the New York Times (Wagner & Gruszczynski, 2018).

The effect of journalists selecting to quote more extreme voices is then further amplified by partisan social media users re-distributing extreme voices from the press on social media networks (Narayanan et al., 2018). Thus, the polarizing logics of journalistic and social media may enhance each other.

However, whether these dynamics occur depends on the type of media content that is circulating in journalistic and social media. Surprisingly, most polarization studies do not actually study media content (Kubin & Sikorski, 2021; Wojcieszak et al., 2018). As such, empirical studies exploring polarization should focus more on exploring media content. To guide such analysis, we will now introduce a framework to study media content that integrates the different dimensions of polarization that interact and potentially disrupt the public sphere.

4. An analytical framework for the study of discursive polarization

Our framework draws on the two basic dimensions of polarization identified by prior research on the polarization of individual attitudes: *Ideological* polarization and *affective* polarization. Both dimensions are also reflected in discourse as people formulate *statements* about issues or groups, and *interact* with other participants in a debate. Thus, for both types of polarization there are two kinds of communicative practices that should be analyzed: Statements (about issues and groups) and interactions (relating to issues and groups), creating a four-fold framework (see Table 1).

Table 1. *Dimensions of Discursive Polarization*

	Statement / Content	Interaction / Network
Issues	Problem definitions Epistemic assumptions Evaluative statements **Σ Polarized framing of issues**	Homogenous amplification of extreme frames Dismissal of opposing frames **Σ Polarized issue networks**
	Σ Ideological Polarization	
Groups	Social identity polarization (us-versus-them) Negative constructions of out-groups **Σ Polarized group-related content**	Ideologically homogenous (follower-)networks Dismissive interaction with out-groups **Σ Polarized group-related networks**
	Σ Affective Polarization	
	Σ Discursive Polarization	

In the following, we will suggest indicators of how to measure discursive polarization in media content. This is based on a review of empirical studies that explicitly relate to polarization and media content. We do not aim for a comprehensive meta-analysis, but engage with those studies that seem particularly helpful for an analysis of discursive polarization. In order to be able to cover large numbers of texts and because these methods are relatively recent, we will focus on automated approaches, but these should be combined with more traditional manual quantitative and qualitative analyses in order to assure validity and gain a deeper understanding of

patterns of polarization. The indicators in our framework are not necessarily comprehensive, but, following from the understanding of polarization developed above, they are relevant and provide a starting point for identifying degrees and patterns of discursive polarization. Changes on single indicators (such as diverging problem definitions) are not sufficient to diagnose the polarization of media debates. We conceptualize it as a meta-process that combines divergence on different dimensions and several indicators –though not necessarily on all indicators in our framework.

Offline news media content (e.g. printed newspapers) does not allow for much interaction, so the interactive (right column) side of the framework applies to digital media content. The relevant digital content comprises both professional journalistic online news *and* user-generated content, such as practices of forwarding of news, and following and interacting with other social media accounts.

4.1. Ideological Polarization in statements: Polarized framing

We suggest grasping ideological statements through the lens of the framing approach. Following Gamson and Modigliani (1989) we have a broad understanding of frames as "interpretive packages" providing a "central organizing idea" [...] "suggesting what is at issue" (3). We do follow Entman's (1993) approach of identifying frames as being constituted of different elements, but we do not take his frame elements (problem definitions, moral evaluation, causal analysis, treatment recommendations) as an orthodoxy defining the ultimate and only list of possible frame elements. We suggest the addition of one important element of polarizing debates, what might be called epistemic polarization: different assessments of the validity of factual assumptions (e.g. Is climate change man-made?). If large groups in society cannot agree on at least some basic facts concerning a contested question, this would be one indicator of polarization.

To untangle the frames used by different groups, we suggest addressing three central questions: Within a broader common debate (e.g. climate change), (1) which problems do different groups address (e.g. transition to renewable energies or climate justice), (2) which epistemic assumptions do they emphasize, and (3) how do they evaluate the situation (in terms of how the problem is evaluated, to whom responsibility is being attributed, and which solution is advocated)? If, within a debate, these elements diverge starkly between different groups, we would find polarized frames.

Problem definition: What is at issue?

The climate change debate in the United States provides one example of how the lack of shared problem definitions fuels division. Contrarians and warners are said to be talking "past each other" (Hoffman, 2011), in the sense that there is a common broader debate (climate change) but different aspects are seen as being at issue. These different problem definitions are the core element that distinguishes different frames in a debate.

Feldman et al. (2015) use a deductive approach to distinguish different frames, such as discussing the impacts and threats posed by climate change as opposed to, e.g., the efficacy of countermeasures. They find their frames through fairly simple search strings that, nevertheless, generate interesting results: e.g., the Wall Street Journal, compared to other U.S. newspapers, was least likely to discuss the threats and most likely to include negative efficacy information concerning climate change.

Algorithmic topic modeling and transformer-based language models may help to identify different frames inductively (Grootendorst, 2022). Whether the topics resulting from such modelling can be interpreted as indicative of frames needs to be determined qualitatively by the researchers through interpretation of the most closely associated words and texts. It may be helpful to consider the topics as frame elements rather than frames, or to aggregate different

topics into frames (see Brüggemann et al. (2022)). Demszky et al. (2019) use LDA-based models to analyze partisan polarization in Tweets about 21 mass shootings in the United States. They find that Republicans and Democrats tweet about different topics. E.g., Republicans focus more on the shooter (particularly if he is a person of color), while Democrats focus more on the victims (unless the shooter is white).

Epistemic Assumptions

After identifying the common or diverging sets of problem definitions in a given debate used by different groups, the analysis of discursive polarization may identify whether there is a shared set of facts, as in Clark and Schaefer's (1989) idea of "common ground" as a necessary condition for mutual understanding. A similar idea is part of Habermas' (1987) theory of communicative action, in which discourse is necessary if a shared understanding of the relevant facts can no longer be presumed. We thus ask: What is considered a relevant 'fact' in relation to a given topic? If different groups increasingly disagree about this question, this might indicate discursive polarization. Again, it is possible to analyze this with the fairly simple means of identifying search strings or dictionaries that represent different sets of epistemic assumptions.

It is not the aim of such an analysis to determine which truth claims are legitimate: it may be that one side represents the consensus of science and the other side just denies basic facts (as in the denial of anthropogenic climate change), but there may also be conflicts where there is less scientific background consensus about what is to be considered as factual truth.

Jang and Hart (2015) compared the frequencies of search strings indicating a real or hoax frame on climate change by combining the words *climate change* or *global warming* with the simultaneous usage of other terms indicating denial or acceptance of its existence (e.g., *real*, *fact*, *hoax*, or *fraud*). They show that Tweets in states with a Democrat or Republican majority

mirror the public statements of the respective party elites by predominantly accepting or denying anthropogenic climate change. Brüggemann et al. (2020) manually identified a dictionary of terms related to mutual allegations of lying. They find ample evidence for what they coin "hoax discourses" in the English language blogosphere and conclude that both groups are, in fact, mutually polarizing each other by observing and addressing each other as liars. Topic modeling may also help to identify epistemic rifts. Guber et al. (2021) used topic modeling of floor speeches in the American Congress to show that Republican elites – in contrast to Democrat elites – tend to deny anthropogenic climate change.

The norms and routines of journalism have contributed to exacerbate epistemic polarization. This has been shown for the issue of climate change. Instead of reporting what is consensus among scientists, journalists provided a voice to deniers of climate change in a failed attempt to provide 'balanced' coverage (Boykoff & Boykoff, 2004). The journalistic norm of balance and the news values of novelty and conflict combine to explain this practice of providing visibility to fringe voices (Brüggemann & Engesser, 2017). While this has changed in leading news outlets in different countries concerning the issue of climate change (Brüggemann & Engesser, 2017), this pattern of creating epistemic conflict in areas of scientific consensus is still a salient pattern in U.S news coverage of other issues (Merkley, 2020). Merkley's study is exceptional in that it combines machine learning to identify articles that touch areas of scientific consensus, a dictionary approach to identify experts being mentioned, and the manual coding of experts representing the scientific mainstream.

Evaluative Statements

Opinion polarization concerns the evaluation of certain paths of action, expressed in more or less drastic and polarized ways. Manual content analysis could code expressions of opinions on issues as pro and contra, and it might also identify extreme vs. moderate evaluations.

Nevertheless, most studies of diverging and polarized opinions were based on surveys that also asked about media use (Calero Valdez et al., 2018; DellaPosta, 2020; Hart & Nisbet, 2012; Lee et al., 2014), rather than looking at actual media content.

Concerning social media, analyses of hashtags can be a shortcut to identifying opinions on divisive issues. Giglietto and Lee (2017) showed how the online discourses of the 2015 Paris terrorist attacks were not only dominated by "#JeSuisCharlie" but also oppositional statements featuring the hashtag "#JeNeSuisPasCharlie." Lang et al. (2021) showed by combining qualitative and quantitative analyses how hashtag uses on Twitter revealed support and opposition to wearing protective masks.

Baden et al. (2020) have developed a hybrid type of content analysis, combining topic modeling with manual analysis. The core idea is to manually code (drawing on the most relevant articles) topics as instances of theoretically relevant categories (e.g. frames). Yarchi et al. (2020) show the applicability of this method in an analysis of debates on different social media networks about the shooting of an unarmed Palestinian in the custody of the Israeli army. They demonstrated that it was possible to code topics as indicating support or criticism of the incident, and also to identify the intensity of the emotional expression.

4.2. Ideological Polarization in interactions: Polarized issue networks

Ideological polarization can not only be analyzed by looking at the frames in statements, but also from an interactional perspective. This is highly relevant when studying digital networks. Polarized issue networks consist of frequently retweeted, hyperlinked or shared ideologically extreme content that can be attributed to clearly distinguishable groups. Thus, digital networks produce "ad hoc [issue] publics" (Bruns & Burgess, 2011) and also ad hoc issue-related polarization in terms of both support for users' own ideology and dismissive interaction when oppositional positions become visible.

To analyze this, we suggest exploring: **(1)** Do users **amplify extreme frames** from one side of a conflict, and is this combined with **(2) dismissal of opposing content**?

Homogenous Amplification of extreme frames

Users contribute to the polarization of digital networks by amplifying extreme frames, thus ultimately crowding out moderate and alternative perspectives. This process is further enhanced by the algorithmic logics that enhance the salience of statements which users interact with most.

Analyses of the (re-)distribution of very different hashtags can be used as a proxy to measure the degree of amplification of (extreme) frames (e.g. (Giglietto & Lee, 2017; Hemphill et al., 2013; Reyes-Menendez et al., 2020).

Barberá et al. (2015) showed that Twitter users tended to share ideologically consistent posts on political issues. Gallagher et al. (2021) analyze retweet rates of posts to identify the most visible accounts. They find that different publics "amplify different elites" and their potentially extreme content (Gallagher et al. 2021: 9).

Cluster analyses of interactional network maps can then help to show within which groups (extreme, fake, or conspiracy) frames are amplified (e.g. (Bruns et al., 2020). Choosing this path, Hartmann and Lang (2020) identified distinguishable user networks in Twitter debates referring to the G20-protests in Hamburg in 2017. Users employed very different word patterns, thereby framing the events differently and placing more or less blame on the respective outgroup for the escalation of the events. Clusters of users in networks also differ in their degree of sharing of disinformation on Twitter, with the most likely distributors of disinformation being partisans from both sides of the political spectrum (Nikolov et al., 2021).

Dismissal of opposing frames

Studies refuting the hypothesis of echo-chambers have shown (as pointed out above) that most audiences are not completely isolated from frames and perspectives that challenge their worldviews. Yet, this does not necessarily lead to better understanding of the other side. On the contrary, users might even engage with dissonant frames – but in a hostile, dismissive way: i.e. commenting how e.g. "stupid" a certain diverging interpretation is. Kaiser (2017) showed that climate-related news articles in mainstream media were hijacked by climate change deniers, "successful[ly] brigading mainstream comment sections and countering the mainstream narrative" (p. 1661).

4.3. Affective Polarization in statements about groups

Groups are communicatively constructed through *statements* about groups and by *interacting* with certain people more intensively or differently than others. We will start by discussing the role of statements relating to groups that may occur both in traditional offline news content and in digital media networks. These statements are expressions of (not) belonging to groups, accompanied by the description of a divided world into an in-group and an out-group, an us-versus-them-narrative (cf. Druckman & Levendusky, 2019; Fernbach & van Boven, 2022; Huddy et al., 2015; Iyengar & Massey, 2019). Two subdimensions deserve our analytical attention: are groups framed as opposing camps within an **(1) "us-versus-them"-narrative,** and are the respective **(2) outgroups characterized negatively**?

Social Identity Polarization: us-versus-them

To analyze the communicative construction of polarized group identities, we must first identify the most salient and relevant social identities in a given debate. Scholars could either deduce potential group conceptions from past research on the respective issue or inductively identify

relevant social groups described as clashing on a given issue using interpretive methods. One way would be to identify labels used to identify groups, such as "deniers" and "alarmists," which has been shown to be very salient in the English-speaking debate in blogs about climate change (e.g.: Brüggemann et al., 2020).

Once the relevant social identity constructions have carefully been identified, their distribution could be measured through quantitative manual or automated methods of content analysis. A particular form of polarizing identity construction through communication is to set oneself apart from 'the mainstream,' as is the case by self-declared 'skeptic' counterpublics emerging around issues such as Covid-19 policies, climate change, Brexit, or the EU refugee crisis (Jonas Kaiser, 2017; Jonas Kaiser & Puschmann, 2017; Tyagi, Babcock, et al., 2020). It may also be insightful to automatically count the distribution of terms that indicate belonging, such as "us" and "we," - as it was done in social media analyses (Reyes-Menendez et al. 2020) and (manually) in older studies about the construction of European identity (Wessler et al., 2008).

Negative Construction of Out-Groups

Yu, Wojcieszak & Casas (Yu et al., 2021) demonstrate how negative affective group perceptions can be identified within large text corpora. They analyzed more than one million tweets and trained a machine learning classifier to identify the tone of the posts. They find that politicians actually focus on positive Tweets about their ingroup, but Twitter users instead tend to retweet negative statements about the outgroup. This also provides a good example of how *statements* about groups (this section) and *interactions* with other users and their statements (next section) interact to fuel processes of discursive polarization.

For a closer look, manual coding is indispensable, potentially combined with semi-automated sampling methods of the relevant parts of the text. Harel et al. (2020) collected data from an Israeli right-wing Facebook page and selected the posts and comments that mentioned "leftist"

actors. This sample was then qualitatively coded to uncover the interplay "between identity, affective polarization, and dehumanization" (p.7) of the *political other* by a right-wing online community.

4.4. Affective Polarization in communicative interactions: Polarized group networks

Scholars such as Barbera (2020) made a strong case that especially on platforms like Twitter, Reddit or Youtube (An et al., 2019; Wu & Resnick, 2021), polarization dynamics are not primarily ideological disagreements about issues, but dismissive *interactions* with out-groups. We suggest exploring: (1) Are users **mainly following ideologically consonant** peers? (2) Are communicative exchanges **across camps hostile, dismissive interactions**?

Ideologically homogenous networks

Ideological networks evolve by following (or linking to, in the case of blogs) like-minded persons and unfollowing dissenters. Studying Twitter networks, Tokita et al. (2021) observed that networks sort ideologically not necessarily by individuals deliberately following others with similar ideologies. Instead, networks sort as users gradually unfollow those ties that distribute dissonant information. The more a user retweeted ideologically slanted information, the more he or she was losing followers from the other ideological camp and, thus, unintentionally, sliding into an ideological echo chamber. "This suggests that 'echo chambers' – to the extent that they exist – may not echo so much as silence" (Tokita et al. 2021, 1). Other research also illustrates this type of dynamic that users block, unfollow, and unfriend those on social media who appear to conflict with their own position (Bozdag, 2020; Johannes Kaiser et al., 2022).

Kaiser and Puschmann combined hyperlink network analyses of climate-change-related blogs with analyses of the respective content and found strong homophily, including the absence of certain frames (see: Jonas Kaiser, 2017; Jonas Kaiser & Puschmann, 2017). They label this

type of network counterpublics, having "few in-links from the mainstream public sphere, while also showing only few out-links to the mainstream." (Kaiser & Puschmann 2017: 373). Their work also showed that, to delimit one's own frame from a discursive climate mainstream frame, users allied with other anti-mainstream sources that did not fit their ideological beliefs – except from being against a certain mainstream. These user practices resulted in the formation of an "'alliance of antagonism' with other groups" (Kaiser & Puschmann 2017: 371).

Polarized networks are often dominated by actors with a high degree of centrality: "super-amplifiers" (Yoon et al., 2022). In political debates, such accounts often are partisan media, politicians, and political organizations (Gallagher et al., 2021).

Ideology of networks could thus be evaluated by analyzing the statements of the most central actors within follower–followee networks. A high degree of centrality of a few ideologically extreme actors – while simultaneously lacking connections to other communities that circulate different content – can then serve as a proxy of ideological homogeneity of a user's network.

In contrast to the study of statements amplified (forwarded) by users, the followership perspective focuses on a structural, and thus more enduring, feature of a network. These structures are also evolving over time; Kearney (2019) showed that partisan networks were exponentially growing and becoming more politically homogenous during U.S. elections.

Dismissive interaction with out-group

Interactions with out-groups in polarized networks are primarily of a dismissive and hostile nature. User networks who deny or warn about climate change provide an example of dismissive interaction. In one of the few analyses looking at the actual content of interactions closely, van Eck et al. (2020) explored blogs, finding that "interaction sequences with well-reasoned argumentation and deliberation (issue framing) often engendered uncivil

conversations (negative identity and relationship framing)" (474). Even rational criticism is being perceived as an attack on one's own and responded to with attacks on the other's group identity.

While Brüggemann et al. (2020) find "*mutual* group polarization" between both deniers and mainstream actors in the English-speaking blogosphere, Tyagi et al. (2020) find that attacking the other side on Twitter is more common among contrarians. Similarly, Meyer et al. (2023) show that, while mainstream discourses about climate change on Twitter call for action, criticize governments, and are discussed within relatively homogenous communities, climate change denialists are disproportionately interacting with and potentially aiming to highjack these debates (Meyer et al., 2023). While cross-camp hostilities might mostly originate from one camp, this might still result in increasing levels of affective polarization among both groups.

In another paper, Tyagi et al. (2020) develop a useful template on how to measure this type of affective polarization on Twitter. Firstly, the stance of a user concerning climate change (acceptance vs. denial) is automatically identified, drawing on existing algorithms. Secondly, sentiments in cross-group communications are compared to in-group communication.

Theocharis et al. (2016) have shown how hostility can be investigated in big data corpora by training a machine learning classifier to identify uncivil communication styles.

5. Outlook: An agenda for future research

Among the wealth of research on polarization, there are comparatively few studies which explore how polarization evolves in media content, particularly with regards to news media (Kubin & Sikorski, 2021; Wojcieszak et al., 2018). In order to inspire future research, we have developed an analytical framework to study discursive polarization as a multi-dimensional process of divergence emerging in various forms of media communication. Engaging with

exemplary past studies, we have both summarized existing findings and identified innovative ways of how to measure the different indicators of discursive polarization.

Past research shows how both digital networks and (based on very few studies) journalism foster rather than contain discursive polarization. Both types of media content enable users to form ideologically homogenous groups, often centered around extreme voices that are nonetheless visible to the outgroup. Thus, the echo-chamber has windows, but they mostly provide distorted views of an unpleasant neighbor.

Few studies measure polarization on different dimensions. Yet, this is necessary in order to explore the relationship between the ideological and affective dimensions and between polarizing statements and interactions. Here, our framework is helpful as it identifies different (sub)dimensions, but limited in that it does not allow for hypotheses regarding how exactly the different dimensions interact. Also, our framework covers relevant but not all plausible indicators of discursive polarization. Furthermore, the interaction between digital networks and news media content deserves the attention of future studies. Different debates should be compared to tackle the question: Under which conditions do mediated debates polarize?

While our framework allows one to identify different degrees and patterns of polarization, it does not say how to evaluate these patterns. The normative appraisal depends, ultimately, on the kind of public sphere that a given researcher favors. Also, there is room for future normative theorizing: Where is the tipping point between a healthy degree of contestation and destructive conflict? It seems fair to say that, so far, neither Habermas nor Mouffe (to just mention the most prominent voices) have provided a clear answer to this question. Yet, different models agree that there is a degree of polarization, even in an agonist-pluralist model, that is normatively undesirable. This raises the question of safeguards against pernicious polarization. Encouraging more interactions across diverging ideological groups will not necessarily reduce polarization. It all depends on how these interactions occur. Platforms and journalism should

therefore refrain from privileging the most extreme voices in a given debate and encourage voices that provide novel perspectives on contentious issues, thus dragging publics out of the us vs. them dynamic of polarization.

While a democratic society needs to search for a common ground on contentious issues, solutions and truth will *not* always reside in the middle. It may be that radical propositions on a given issue may actually represent the most democratically legitimate claims, based on the most accurate analysis of the problem at hand. In this case, naïve calls for depolarization may actually be harmful to democracy (Kreiss & McGregor, 2023). Productive debates may not be about a compromise between two extreme positions. Yet, constructive perspectives on social problems may remain invisible if any debate is reduced to two opposing poles.

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