How do Intermediaries shape opinion formation? Findings from a qualitative study

Jan-Hinrik Schmidt, Lisa Merten, Uwe Hasebrink, Isabelle Petrich, Amelie Rolfs

1   Introduction

Luisa, a young woman of 17 years from Hamburg, is a regular user of YouTube, especially to get information on topics she cares about. One day, her mother recommended a video documentary on climate change which had been produced by Public Service Broadcaster ARTE. In the algorithmic recommendations connected to that video she discovered another educational video – which argues that there is no such thing as man-made climate change. Luisa, who is heading the local youth group of an environmental NGO, was confused: „Well, you don't really know what to believe, because some information looks good or trustworthy, although I don't understand everything. It is very hard to tell Facts and Fakes apart".

When Jasmin, a 22-year-old trainee in a large company, left work on the early evening of Juli 22nd, a push message on her smartphone breaks her the news about a rampage in Munich. At home, she switched on her TV to follow the news, but used WhatsApp and Facebook as second screen to check the safety of her friends and acquaintances in the Munich region. On Facebook she came across an eyewitness video showing shootings and injured people: „I saw that on TV as well, but on Facebook literally thousands of people shared and liked the video (…) It was just there".

Dieter is 54 years old and an active member of an NGO on transportation and mobility. He considers Google to be an important tool to keep up with information on his interests and topics. But he strongly disapproves Google's monopoly and critizises other Internet companies as well, although they might help him to mobilize support for his political positions: „No, I don't want to share anything on Facebook or Twitter, because they are undemocratic companies which have their own particular agenda".

These vignettes, which were collected during qualitative in-depth interviews, exemplify a conclusion which many other studies have drawn before: Online intermediares such as search engines, social network sites or video platforms are central to the contemporary digital public sphere. While their functionalities and affordances differ, they share three basic characteristics (see Schmidt 2017):

1. They support the *simultaneous debundling and rebundling of content*. Intermediaries present news, videos, status updates, etc. not like traditional publications, i.e. as discrete packages with a temporal rhythm (the „news show" or „newspaper edition"). Rather, they produce constantly updated „streams",

„feeds" or instantaneous search result lists. Instead of editoral curation, inclusion and exclusion of content in these new information bundles is based on algorithmic selection, e.g. on calculations of relevance for a search term or on proximity within the social graph.

2. This particular kind of „algorithmic media production" (Napoli 2014) fosters the *personalization of information diets*. This can be part of intentional practices, i.e. when people add other users to their contacts or subscribe to video channels. Many instances of personalization, however, happen unintended, insofar as intermediaries use filter and recommendation systems which draw on previous activitities and metadata about a user and her social graph in order to hide or promote certain information.

3. Online intermediaries (with the notable exception of search engines) *assist follow-up-communication on published information* by providing functionalities for easy commenting, sharing or evaluating content as well as making the aggregated results of these practices visible for other users. These affordances not only foster the dynamic, sometimes viral spread of information within social networks of users, but also provide new indicators for the popularity or impact of certain information.

Through these characteristics, intermediaries greatly shape information flows and subsequent practices of opinion formation on topics of collective relevance. The US presidential election and the Brexit referendum in 2016, but also national elections in France and Germany in 2017 were culmination points for debates about the consequences of this influence. A growing number of academic studies now provides empirical evidence, yet of mixed nature. On the one hand there are studies arguing that intermediaries do support „inadvertent exposure" (Brundidge 2010, p. 695), „accidental exposure" (Valeriani, Vaccari 2016) oder „ambient awareness" (Hermida 2010), i.e. unplanned exposure to a variety of topics and information. This in turn can increase not only the feeling of being informed (Müller et al. 2016), but also the level of knowledge on news topics (Bode 2016). Trust in information found on social media is especially high if it is shared among social ties, especially by perceived opinion leaders (Turcotte et al. 2015). And social media can provide „situational awareness" (Vieweg et al. 2010) in crisis situations such as natural desasters or terroristic attacks, where people are looking for information on their friends and family which the will not find in journalistic coverage (Bruns, Burgess 2014).

On the other hand, there are fears that intermediaries foster structural deformations and constrictions of digital public spheres such as „filter bubbles" (Pariser 2011) and „echo chambers" (Sunstein 2009), where people are no longer exposed to a variety of topics and perspectives, but remain within fragmented and polarized clusters of worldviews and opionions. Empirical evidence suggest that some groups do actually form such isolated clusters, e.g. conspiracy theorists (Bessi et al. 2015; Mocanu et al. 2015; Del Vicario et al. 2016) or far-right, islamophobic movements (Puschmann et al. 2016; Stier et al. 2017). Yet other studies argue that overall, most users of intermediaries are exposed to both „cross-cutting discussions" and „like-minded discussions" (Flaxman et al. 2016; Heatherly et al. 2016; Vaccari et al. 2016; Zuiderveen Borgesius et al. 2016).

Many of these studies are based on quantitative approaches, often focussing on only one social media platform. This paper, in contrast, is based on a qualitative study which had been commissioned in 2015 by "die medienanstalten", the Association of the German State Media Authorities, in order to answer three central questions:

1. How relevant are online intermediaries for different user groups regarding information on events and news which are relevant to society?
2. How do users place online intermediaries and their content into specific practices and networks of opinion formation?
3. How knowledgeable are users with regard to the algorithmic selection processes of online intermediaries, and to what extent does such (non-)knowledge go hand in hand with certain degrees of reflected use of online intermediaries?

Section 2 of this paper describes basic conceptual aspects and the empirical design of the study. Sections 3 and 4 summarize key findings regarding the three questions, and section 5 draws a conclusion of this study.

2   Basic concepts and design of study

Because of the limited time frame available (12 months between March 2016 and February 2017), the qualitative study did explicitly not follow a "grounded theory approach" (Strauss, Corbin 1990). The initial project proposal already included three basic conceptual decisions, shaping the empirical design. The first decision, in reaction to the call of proposals, was to focus on four types of intermediaries (search engines, social network sites, photo & video platforms, and instant messaging services). Other social media, most notably Blogs, Twitter and Wikipedia, were not central to the research, although they sometimes were mentioned in the interviews. Second, opinion formation with and via media was conceived as a multi-step-process with six different aspects: Information gathering and acquisition of knowledge; perceiving the public agenda; perceiving frames; perceiving climate of opinion in relevant groups; forming attitudes and opinions; forming intentions and acting on them.

The third basic assumption is that these processes of opinion formation are always situated in a social context, i.e. they are part of social interactions within particular social groups. These groups can be described as „communicative figurations" (Hasebrink, Domeyer 2012; Hasebrink, Hepp 2017) which consist of a particular actor constellation and a shared relevance frame, shared media ensembles and shared communicative practices. In order to be able to reconstruct opinion formation and intermediary use within such communicative figurations, the study recruited six pre-existing groups along two dimensions (see table 1):

- *Age*; with three age brackets (Teenager; young adults; adults) and

- *Political engagement*; contrasting groups where the main group purpose is focussed on political engagement, with those where it is not in the focus (which does not exclude that the group or individual members are politically engaged).

Table 1: Recruitment plan

Political engagement… \ Age	Teenager (14-20 years)	Young adults (20-30 years)	Adults (30-70 years)
… is group focus	Youth group of environmental NGO	Trainee representation of large company (JAV)	Local chapter of NGO (transportation/mobility)
… is not group focus	Group of teenage friends	Football fan club	Group of friends (early retirees)

In a first phase, six semi-structured group discussions were held with four to six members of each group (overall n=27). The group discussions centered around three key tasks: assessing the importance of intermediaries for group communication; evaluating individual platforms in terms of attachement to, trust in and credibility of the information found there; reconstructing an exemplary episode of opinion formation in the group. The discussions took around 90 minutes each and were held between June 10th, 2016 and August 18th, 2016.

For the second phase, three members of each group were selected for follow-up individual interviews (n=18). These interviews were conducted between June 29th and August 26th, 2016. They had two main objectives: (1) *Reconstructing and visualizing the media repertoire of the person by means of card sorting.* Participants were given Post-Its and asked to write down all their sources for information on socially relevant events and topics, then to place them on a large sheet with several concentric circles (see figure 1). During this exercise, the interviewer continually asked participants to reflect on issues such as importance, frequency of use or credibility of the different sources, specificially those which were connect to different intermediaries (for a thorough methodological discussion of this approach see Merten 5/27/2017). (2) *Gaining insight into actual practices of intermediary use.* Participants were asked to show and explain their personal setup of certain platforms or typical episodes of use (e.g. browsing the Facebook News Feed or conducting a search on Google) "live", i.e. either on their mobile device or the interviewer's laptop. These situations provided another opportunity to reflect on the purpose and importance of particular platforms in the participants' media habits.

Figure 1: Exemplary visualization of a media repertoire (Daniel, 23 years, JAV)
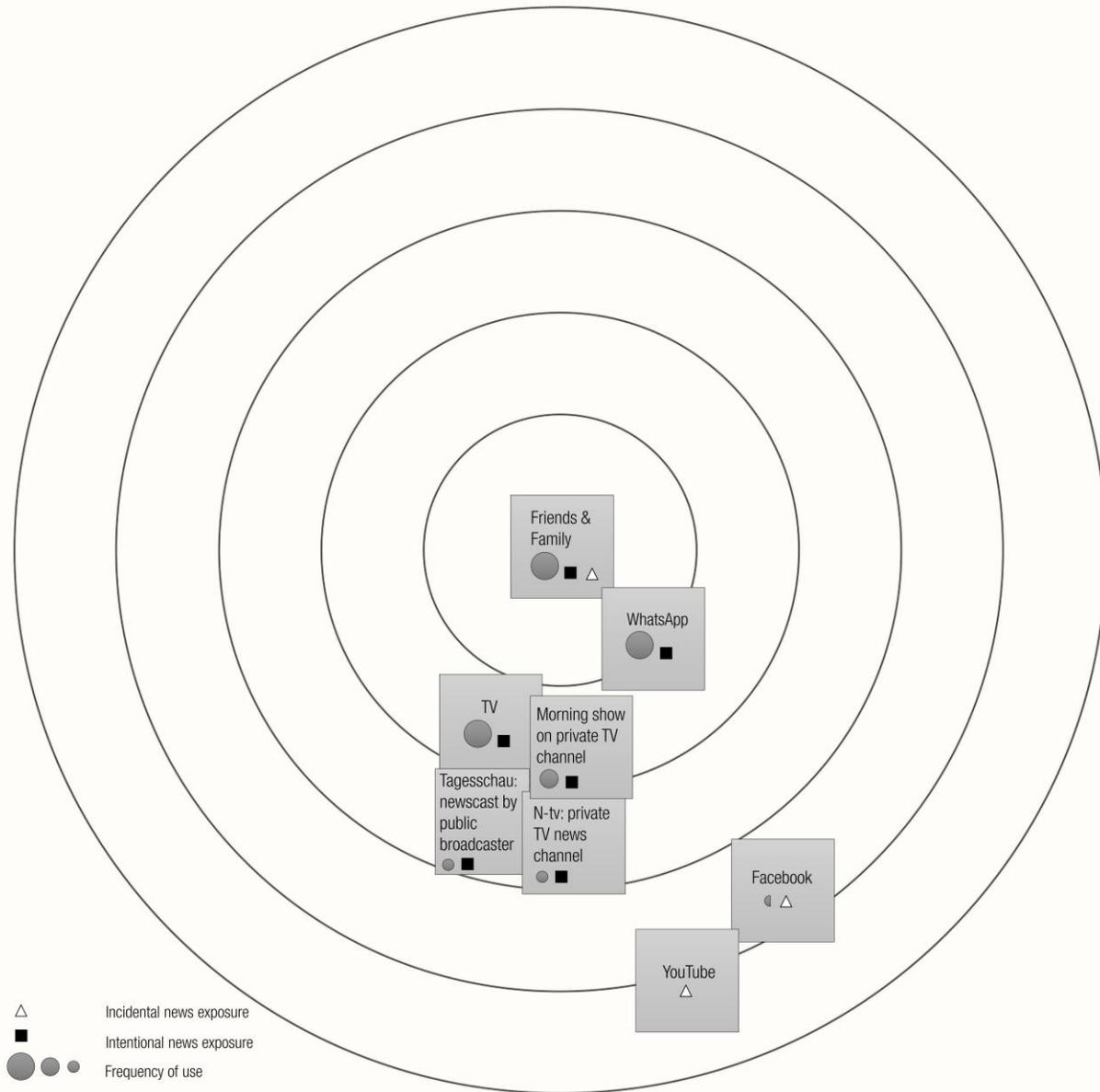
All group and individual interviews were transcribed, then analyzed in three steps. First, trained student assistants coded each transcript in MaxQDA according to a predefined coding scheme. Second, based on these codings and the transcripts, the interview team (lead interviewer and assistant) wrote a portrait for each group and individual, summarizing the main aspects of the interview following a fixed structure. As a third and final step, the whole team (three researchers and two student assistants) held a two-day workshop to jointly answer the research questions based on all previous material (portraits, codings, transcripts) and work on the final report (published in German as Schmidt et al. 2017).

3 Information repertoires and practices of opinion formation

The relevance of intermediaries in information repertoires, and their inclusion in specific practices and networks of opinion formation, differs greatly between the intermediaries.

Search Engines: Google is the dominant search engine in all age groups. Users understand it as a tool, sometimes even as a synonym for the Internet, but usually not as a source in itself: "I don't consider a search engine as an information source, it is more of a tool – you search something, then you click on a link to a page, and there you have your answer" (Nele, 18, Youth Group NGO). More specifically, the participants see Google as a central tool for satisfying all kinds of information needs arising in a particular situation or regarding a particular topic, and they engage primarily in directed information search. Only rarely were episodes of undirected use reported, mainly from participants who deliberately use Google News or Google Now to gain a general overview on news. Regarding news on current events, various participants state that the list of search results already provides an early orientation, possibly also giving insight into the diversity of positions through numerous (also: journalistic) sources. Almost none has noticed patterns of personalization on the basis of previous search queries and algorithmic selection. Still, some hold concerns regarding data collection and at least episodically switch to alternative search engines such as Ecosia or Duck Duck Go, but are not as satisfied with the quality of the search experience as they are with Google.

Social Network Sites: Facebook is still the dominant social network site in Germany. While regular use could only be observed in the two groups of young adults (20 to 30 years), almost all respondents are at least somewhat familiar with the site, either through previous use or through observations among family members, friends, or colleagues. The respondents consider Facebook to be rather unimportant for their opinion formation, and they all stress that its predominant purpose is in maintaining social contacts. Indirectly, however, this can have an effect on the perception of current events, since the architecture of Facebook's Newsfeed affords a constant monitoring of current developments. In times of a particular crisis, e.g. a terrorist incident or rampage, it additionally provides information about the safety of friends or family which can not be covered by news media. And for a few of the respondents, who are strongly information-oriented users, Facebook provides access to traditional journalistic sources as well as to niche interests or counter-publics, making it an attractive platform to customize one's information repertoire. Regarding comments, many respondents acknowledge that Facebook makes the distribution of other opinions (both "minority" and "majority opinions") visible. However, almost all hold a very negative view of comments on public pages („war zone", as Daniel [23, JAV] put it). Additionally, various users also articulate dissatisfaction with the quality of content and the algorithmic sorting in general, but also report that they are still tied to their social contacts in the network: „I would love to get rid of Facebook, but in the end it is a good tool for communication. Facebook is popular and everyone is on it" (Fabian, 23, football fanclub). Those who left Facebook for alternative platforms have mainly chosen WhatsApp to engage in group

communication, but occasionally also switched to photo and video platforms such as Instagram. Some non-users also report that they have "proxy users", i.e. friends or relatives who report important news from the platform or whom they can ask to occasionally look up someone else.

Photo & video platforms: The main platform in this category is YouTube, which almost all respondents use. They consume videos predominantely, but not solely for entertainment purposes (e.g. music, comedy and satire) and have no interest in participating in discussions via the comments or in creating and uploading videos of their own. Only a few respondents have accounts on Instagram or Snapchat, but they do not report any use of news on these sites. Several aspects of YouTube use are relevant with respect to current events and political topics. First of all, there are a number of popular German News YouTuber (such as LeFloid or KenFM), which are mainly known and used by younger people, often habitualized (through channel subscriptions). They appreciate them not primarily a source of factual information, but rather as an opportunity to learn about other people's opinions and arguments, and to form one's own opinion on these grounds. Other participants report that they use YouTube mostly for specific topical interests and/or when looking for in-depth information, which can include current events and news. Starting with such specific informational needs, users sometimes switch into a mode of „browsing around", where they rely on algorithmic recommendations to access additional content. „On YouTube it happens even more often than on Google that I loose track: Where did I start? What did I search for in the beginning?" (Thomas, 49, transportation NGO). But there is also some evidence that such recommendations lead users to professionally produced propaganda, which in turn can lead to uncertainty or even deception (see the example of Luisa cited in chapter 1).

Instant messaging services: WhatsApp and (in a few groups) Facebook Messenger are central means to maintain social ties and to exchange information within groups. Because they allow users to keep in touch with their respective peers, reference groups and small-scale social contexts such as family, friends, colleagues, etc., they have substituted Facebook for many respondents who consider the social network site no longer suitable or attractive. Accordingly, users describe WhatsApp as "closer" and "more personal" than other intermediaries. But beyond the general support of social ties and coordinated social activities, various participants reported episodes of shared collection and recommendation of information sources via Instant Messenger. Lenia (30, football fan club), for example, talked about a situation where the fan club members debated whether to change their „home block" in the stadium after a sexist incident: „One of you guys had posted a link [on FB messenger; authors] to a blog or something from the fan community where they covered this incident. […] And our voting whether to change the Fan Block is conducted online at the moment". Instant Messenger can also become important in crisis situations where people have a strong interest to learn about the well-being of their friends and relatives. Most respondents, however, consider them not as adequate tools to consume journalistic content, sometimes even excluding this possibility categorically: "Could you imagine adding Tagesschau or n-tv as

WhatsApp-contacts?" [Interviewer] – "Well, no. There's a difference for me. I mean, I don't want to deal with them in my private life" (Daniel, 23, JAV).

When talking about their information repertoires, the participants mentioned many more sources, which were not addressed in the same detail by the interviewers. Nevertheless some key aspects can be summarized based on the visualization and the discussion: *Journalistic media* (e. g. Tagesschau, Spiegel Online) are at the centre of almost all repertoires; they become especially salient in times of breaking news or critical events. Older participants place high trust in journalistic media and regard them (especially the editorial sections) as very important for opinion formation. Younger respondents are often more critical and suspect certain tendencies in opinion which they aim to counter through a broader set of sources. Almost all respondents stress the importance of *face-to-face communication* for opinion formation, especially within the groups.

A few opinion leaders among the respondents use *Twitter* as an information platform. Their use is strongly characterized by particular topical interests and highly personalized repertoires of followed accounts. Other forms of *user-generated content* are used for special interests (blogs) or for in-depth study (Wikipedia), but do not play an important role in opinion formation among the participants. Some participants mention *news aggregators* (e. g. Flipboard) which have been pre-installed on their smartphones. They help with undirected informational needs, and their users report that they trust the selection of sources by the App operators.

4 Knowledge and reflected use

All users (as well as non-users) have basic *knowledge of general functionality* of the various intermediaries, but in-depth knowledge, e.g. about search operators or options to change personalization settings, is unevenly distributed. For example, most users are able to distinguish between intermediaries as platforms and the content or channels they make available. There is, however, a certain "hierarchy" from Google and Instant Messaging Services (where it is usually easy to distinguish platform and content) to social network sites and YouTube, which some uses see as "broadcaster" without reflecting on the origin of individual videos or channels. The attitude towards intermediaries is mostly cautious, partly marked by fundamental mistrust (see Dieter in the examples cited in the introduction), partly marked by a consideration of pros and cons: „I had a discussion with my parents the other day, whether it makes sense to trust them [Internet companies; authors note]. But I often have the feeling that big companies have to do things correctly and in order, because otherwise they would damage themselves. And who would want to do that?" (Franz, 15, Teenagers).

Most users also have a general understanding of *business models and advertising*. The active users of intermediaries usually know about the corporate connections (Facebook owns WhatsApp & Instagram; Google owns YouTube). Almost all respondents notice personalized advertising during their everyday use. Some see the benefits of it, e.g. Jasmin (22, JAV): „Well, if it is technologically possible, then I am very much in favor of

seeing what I might like, without me really knowing what I want". But many express dissatisfaction, mainly because personalized ads are seen as too inaccurate or irrelevant. Some participants report concern about their own transparency: „Well, I really feel transparent, because you notice: Aha, she searched for this or that, and now we bombard her non-stop with ads" (Sabine, 66, Friends). Respondents assume different revenue sources of intermediaries, though: Besides advertising, they imagine the selling of data and the selling of prominent places in the newsfeed or the search result list as revenue sources. Some respondents also articulate and reflect on the trade-off between the benefits of personalization and the necessary data flows: „Well, when the data is used for something which gives me no benefit, then I would start to think whether it is still good. But as long as I benefit from it, they can keep on collecting data" (Franz, 15, teenager).

Regarding *knowledge of algorithmic selection and personalization*, most users are to a certain extent aware of the existence and (approximate) mechanisms of algorithmic personalization. Not all of them connect prioritization and personalization directly with their own user behavior. Respondents give different suspected reasons for "good ranking" of content: the top spot could have been purchased; the content is popular with other users, or the content is ranked as "trustworthy" by Google. They recognize algorithmic recommendations mainly on YouTube; but similar to personalized advertisment (see above), users often regard them as not working adequately, resulting in skepticism towards algorithmic selection. Non-users of intermediaries consider the emergence of filter bubbles to be a more realistic scenario than users.

Finally, users also reflect on the *quality and moderation of content* on intermediaries. Users are almost always dissatisfied with the large number of content on YouTube and Facebook which they perceive as irrelevant or "trash". In general, respondents prefer editorial selection to algorithmic selection, while acknowledgig that finding high quality content (e.g. helpful, trustworthy, ...) requires more individual efforts and curation of sources. E.g., Stephanie (22, JAV) explains here personal rules regarding Instagram: „A new account should give me something like 90 percent of stuff I really like. If not, I unsubscribe immediately". Comments from other (unknown) users can help to identify the "climate of opinion" on socially relevant topics. But the hate speech problem is clearly articulated, especially for more popular pages and channels on Facebook or YouTube. Users are disappointed by lack of reaction by intermediaries when problematic content and hate speech is reported. And particularly younger users demand stronger measures to protect minors from harmful content.

5 Conclusion

While the results presented in this paper can not claim to be representative in a statistical sense, they nevertheless provide in-depth insights into the position of digital intermediaries within media repertoires and as part of everyday informational practices and opinion formation. General use of intermediaries is widespread; none of the respondents did not use at least one of the main platforms, and almost all of them use especially

Google and YouTube habitually. Regarding WhatsApp and Facebook we found greater variance in use, mainly because both platforms (and Facebook in particular) pose privacy problems to our respondents.

However, intermediaries are usually not the central source for information on socially relevant events and topics, because the respondents consider legacy media, other journalistic sources online and personal contacts to be more important. The exception are those few individual users with very strong interest in news, who report a very strategic use of intermediaries to manage their diverse set of sources. All users address different informational needs with intermediary use, partly through directed search for specific information (especially via search engines, in some cases also on YouTube), partly through unplanned confrontation with information and opinions (e. g. in Facebook news feed) or confrontation with information and opinions initiated by others from their extended network (e. g. via WhatsApp messages). The exchange with (known) others on socially relevant topics is most likely to take place via messaging services, occasionally on personal Facebook profiles. But respondents have virtually no interest in exchanging information with unknown others, especially given the current architecture of intermediaries which does not foster constructive discussions. Users therefore consider the intermediaries to be less important than traditional journalistic sources and face-to-face exchanges to form opinions in the narrow sense, i.e. to form their own attitude and viewpoint on cerrtain topics and events.

All respondents possess knowledge and engage in critical reflection of at least some of the intermediares and their problems, e.g. regarding data collection or perceived low quality of content, but they arrive at different consequences. Three strategies very mentioned frequently: Consciously deciding not to use certain platforms (e.g. for privacy reasons); ignoring or shrugging off the concerns to be able to continue using a platform; acknowledging the concerns and continually reflecting on the trade-off between perceived problems and the benefits a platform provides. This last strategy might include self-defined rules, e. g. refusing to rely on algorithmic recommendations, and occasionally the additional use of alternative services with equivalent content (e.g. a different search engine). More sophisticated strategies, e.g. configuration of privacy settings, using the anonymous TOR browser, or maintaining multiple profiles, were an exception, as were instances where respondents directly contacted a platform to complain and report fake accounts or other questionable content.

So overall, the study indicates that opinion formation is not imaginable without intermediaries anymore, because they have infiltrated practices of information management and communication in many ways. At the same time, however, they are only one element of opinion formation, and they intervene on this process at different levels and to varying degrees: All intermediaries are part of the search for knowledge and information. In particular Facebook and YouTube, in parts also Instant Messaging platforms support – especially in combination with journalistic media – the perception of socially shared topics, problems, interpretations and opinions by making visible the communication of parts of the audience.

However, face-to-face communication among the own social ties, as well as journalistic media (if trusted), continue to be important for the formation of one's own attitudes and opinions, and for resulting action.

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