

Party Politics, Values and the Design of Social Media Services

Implications of political elites' values and ideologies to mitigating of political polarisation through design

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There have been several attempts to support political engagement through novel social media services. While the political nature of any technologies is widely acknowledged in human-computer interaction, such considerations have been less studied when designing for political engagement in social media services. We used speculative design probes to gauge how political elites perceive alternative social media interfaces designed to increase media diversity and decrease political polarisation. We show how elites' reactions to design probes could be rooted into party ideologies. Based on these, we discuss directions how social media services could be designed. Our underlying contribution is wider. We show how studying elites can provide insights about politics embedded into proposed novel social media services for political engagement. Second, we demonstrate what elites' perspective provide fruitful way to expand and rethink concepts that have been used to study ordinary people before. Finally, we discuss potential challenges of replacing economic interests with political interest in social media service design and provide a richer account on the discussion about social media regulation. Therefore, we pave the way to more research to critically study elites within social computing scholarship and highlight the importance of understanding political motivations which can guide the development of social media.

CCS Concepts: • **Applied computing** → **Law, social and behavioral sciences**; • **Human-centered computing** → *Collaborative and social computing theory, concepts and paradigms; Empirical studies in collaborative and social computing.*

Additional Key Words and Phrases: political elites; political parties; political polarization; news recommendations systems; studying up; democracy

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1 INTRODUCTION

Citizens are using social media services to access news media on current events [e.g., 37], communicate with politicians [e.g., 44, 45, 104] and express and discuss about political opinions [e.g., 18, 42, 59]. However, there are many limitations in computer-mediated communication which limit its utility for democracy [among many others 7, 9, 17]. Motivated by this, human-computer

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interaction scholars have investigated novel digital interfaces to mitigate political polarization and balance news diets [e.g., 30, 35, 36, 71–73, 85] and more inclusive and constructively oriented spaces for argumentation-based discussion [e.g., 53–55, 90].

However, this extensive literature has not been open about its normative assumptions and embedded values. Digital systems always express their creators' values and political positions [80, 111]. This is also well established in human–computer interaction, where many approaches have been developed to make values visible in design and development. For example, participatory and value-driven design approaches seek to bring these issues to the forefront of technology development [11, 34, 70]. Furthermore, recent critical scholarship in human–computer interaction explicitly calls out political implications of technologies [for example 51]. Against this observation, it is surprising that the topic is less heavily discussed when examining how social media services could better serve political discussion and functioning democracy. Values are present in these cases as well, as there are several different normative frameworks about democracy and “good” political participation [for review of HCI research on political participation, see 76].

We engage with the political nature of interfaces used for political engagement and content consumption through political elite interviews. In human–computer interaction research, research on political participation has centred around citizen perspective [76]. Recently scholars such as McDonald and Mazmanian [66] have shown design impacts also more elite political participation. Second, we see studying political elites' perceptions as a vital way to bring to the forefront the different values embedded in digital systems due to their deep engagement with political ideologies and values. Finally, we highlight that political elites have a special role in shaping technologies and infrastructures, inviting closer study of their reasoning as it could have democratic implications [75]. Our overall aim is to *study up*: examine how political *elites* understand and evaluate social media services and based on that discuss potential implications to democracy. Specially, we examine how they perceive potential directions to mitigate political polarization through advanced speculative design probes. In our analysis, we tease out differences emerging from interviewees' political party. We identify how political parties' values, voters' positions and parties' historical context may explain these differences. Furthermore, we seek to understand what concerns emerge among political elites when designing for communication. We will examine what elites' perspectives reveal to us about limitations on the concepts developed and used mainly in studies of non-political elites.

This paper first lays out related work from science and technology studies, design scholarship and human–computer interaction to position this work. Following this, we provide a detailed description of our context, interview process and design prototypes. In Findings, we first explain how our interviewed political elites received and understood the participation in speculative design work, discuss differences in intervention mechanisms and then more broadly on values, and explicate specific concerns political elites have about these interfaces. Based on these results, we conclude our work by speaking about challenges which emerge when we acknowledge the political nature of interfaces for politics and discuss what to consider when working with political elites.

2 RELATED WORK

Through a brief review of classical literature, we first establish that technologies are never value-free and introduce some commonly used approaches which are used to account this in design and human–computer interaction scholarship. Following this, we show how research originating interfaces for politics have values embedded in their work as well, but these are not extensively discussed in the papers. We show this is the case for both when developing novel tools for political discussion and attempts to decrease political polarisation. Finally, we summarise the key findings and formulate our research questions.

2.1 Values, technology and design

It is widely acknowledged that technologies are never value free [among many others 80, 111]. Winner [111] claims that technologies can order and govern human activity through particular designs. Beyond this perspective, Winner [111] also argues that technologies can be compatible with a certain type of social and political relationships. Therefore, technologies should be understood with reference to the social actors able to influence which designs and arrangements are chosen. Regardless of the type of political properties, politics and values are embedded in technologies, consciously or unconsciously, a perspective that Nissenbaum [80] has emphasized. In organizational settings, these values have been studied with technology frames that concern the assumptions, expectations and knowledge organisation members use to understand technologies used in the organization [82]. The values may conflict across different user groups within an organization depending on how they frame technologies to understand them.

As values are abstract, making them visible can be difficult for scholars and practitioners. Furthermore, values are contested and contextual by nature and defined by nations, societies, cultures, and communities – not universal. Embodying values to technical designs then requires technical, philosophical, and empirical understanding of values [e.g., 34, 49]. We identify different broad approaches starting from older design methods to contemporary design, which seek to address these values during a product development process.

Similar to Winner's ideas [111], *Value Sensitive Design* is grounded on the idea that a particular technology is more suitable to certain activities and supports certain values while making other activities and values more difficult to realize [for a summary, see 34]. Value Sensitive Design presents a tripartite methodology consisting of conceptual, empirical and technical investigations to account for human values systematically throughout the design process.

Participatory design approaches have also acknowledged the political qualities of technologies. Since its explicitly political roots in the Scandinavian workplace democracy movement, participatory design has endorsed the idea of democratization of design by bringing those affected by it as part of the design process. These perspectives reflect the political conviction that instead of consensus, controversy should be expected around technical design [11]. Traditionally, this has been tried to reach by bringing the end users as part of the design processes to take into account the variety of perspectives and therefore, improve products [70].

More recently, scholars have suggested widening the perspectives of participation. Instead of focusing only on the technology and its explicit end-users at the time, recent research has suggested considering *design as participation to heterogeneous socio-material assemblages* [11, 61]. This also means moving from particular process-oriented thinking to think of design as infrastructuring. This means that instead of treating designed systems as fixed products, design is addressed as an ongoing process of creating socio-technical resources enacting adaptation and appropriation beyond the initial design process and participants present during it [27, 95]. The idea of infrastructuring emphasizes that in addition to considering the present participants, design should also consider how it might enable new types of use and participation and what other consequences there might occur in the future.

These approaches have been used in wide research cases, including workplace contexts and technologies for children. Recently the focus has turned to actively seek the political effects of technologies and research of digital civics. Scholars have studied and designed digital technologies to support public service provision and improve relationships between citizens and public officials [among many others 4, 5, 24, 60, 62]. Researchers have asked, following participatory design tradition, how citizens participate constantly in the design, creation and maintenance publics or even the society via digital technologies. According to Le Dantec [61], people are not bound

together by identity politics in these publics. Therefore, instead of common goals and beliefs, there are conflicting values and perspectives on the shared issues and set of conditions [27, 28, 61]. For example, in adversarial design, DiSalvo [29] has emphasized this with agonism of design; design and designed things can work as a site of pluralism and contestation of political values. Similarly, speculative design scholars have highlighted this kind of multiplicity by involving and empowering people with different background as part of co-design of speculative futures [2, 13, 105]. These perspectives emphasize that design should be engaged with all of the multiple subjectivities and forms of participation within the public. These efforts bridge together previous work in design and current interests and calls to engage with the wider society and achieve societal impact through our work.

2.2 Improving political discussions through digital interfaces

Social computing and human-computer interaction researchers have extensively studied online spaces for political discussion. For example, they have conducted observational studies on political discussions in online space, such as explorations on social media discussions during elections [115] or discussions and engagement on platforms for civic engagement [1]. Other scholars have taken more design-oriented approaches, asking how online spaces could even further *support* political discussions. These studies have often focused on suggesting or evaluating novel design directions for online spaces, which we now briefly review.

Semaan and colleagues identified issues related to the fragmentation of online spaces for political discussions and work people engage to curate or create spaces in social media for political discussions [89–91]. Based on those, they propose design directions for online platforms, such as diversifying information display beyond the usual contact network to increase the visibility of different perspectives and improving identity management for more reasoned discussion. They envision that a platform could aggregate several social media services together and connect people across platforms.

While Semaan’s work was focused on social media platforms, Kriplean et al. [54, 55] focused on the more formal political discussion taking place in ConsiderIt, a platform they designed. Their platform seeks to help people to outline the pros and cons of the issue under investigation. These issues can be discussed and elaborated among the users, allowing detailed examination of the issue and various aspects related to it. The overall goal is that participants can consider their position in the issue and find elaborated perspectives through the structured process. While a completely different user interface paradigm, systems like Deliberatorium [53] show a similar idea of providing structured discussion to help participants to thoughtfully engage issues.

Others have engaged the problem of a lack of respectful language in online spaces. Initial results suggest that CAPTCHAs can be used to prime commenters towards more positive and respectful tones [88]. Similarly, previous content visible can prime how participants engage in political discussion [99]. Furthermore, political scientists have highlighted how platform designs, such as advertising and affordances, may have positive or negative effects on political discussions [17, 48, 65].

All of these proposed systems embed normative assumptions on how political discussion should take place (recall, that technology is not neutral). These scholars suggest that in an ideal discussion, participants would engage in information-driven discussions, where other perspectives and persons are treated with high respect [89–91]. Similarly, they call out the importance of listening to other participants and engaging in dialogues [54, 55, 88, 99]. These ideas follow Habermas’ influential theory of public sphere and deliberative democracy [for summaries, see 20, 74, 87]. However, the theory is *normative*. That is, it describes a perspective of how political discussion *ought to take place*, but many scholars are doubtful if such conditions have existed or can exist [for summaries,

see [74, 87]. Therefore, when developing such systems researchers seek to promote these values through technological interventions. The values are also manifested when researchers analyse the impacts of these technologies. However, from a different normative frameworks the critique of the design and even interpretation of outcomes would be clearly different [79].

2.3 Mitigating political polarization through digital interfaces

Another area where human-computer interaction researchers have engaged in politics is systems aimed to decrease political polarization in online spaces. In part, the open question if social media and its algorithms contribute to political polarization and decrease media diversity [for discussion on this topics and conflicting perspectives, see 9, 33, 67, 84]. Mitigation attempts have focused on presenting alternative viewpoints. The Balancer [71–73] and NewsCube [85] both provided alternative viewpoints of a news story to the audiences. Similarly, scholars have suggested that recommending people with opposite perspective for discussions or following may mitigate polarization [among others 30, 35, 36].

However, it is unclear if these approaches could mitigate polarization. Nelimarkka et al. [77] in their critical reflection highlight how the common design agenda in polarization mitigation has been increasing contact across polarized groups. Their work in highly polarized social media discussions shows that such discussion may drive antisocial behaviors. Similarly, Bail et al. [8] show that recommending content from the opposite perspective can increase political polarization, while others suggest that such backfiring might not occur [113].

Based on all these findings, it seems that we do not yet have the best design strategy to mitigate political polarization. For this work, we highlight that the common design agenda—focused to increase interaction and knowledge flow across polarized groups—pushes for particular values of political engagement. In this case, we also see that the common design agenda presents visions of how political discussion *ought to take place* in mediated space.

2.4 Summary

Researchers across design, sociology, and human-computer interaction have acknowledged that technologies are not neutral, but rather have values embedded in them. Researchers working on more community-orientated digital civics tools have similarly acknowledged this as well and sought to use design approaches which bring up values [among many others 4, 5, 24, 60, 62].

However, we see less of such engagement when digital tools are developed to support political participation at a national or even global level; such as social media and online discussion forum designs. Even when using strongly normative theories (such as Habermas' public sphere), researchers often fail to acknowledge the limits and challenges emerging from their normative assumptions. Similarly, particular values such as openness to alternative information sources can drive the research and design agendas and thus limit the design space. These can challenge how human-computer interaction scholars and practitioners can address issues related to political discussion in online spaces.

These values—like other values in our society—are open for political debate and discussion. We examine how political elite perceives different design approaches to support political discussion in social media services. The elite perspective is vital due to their powerful position in our society, they define new legislation and rules, navigate differences in values at societal level, and are important in building media agenda. In our case, they could explicitly regulate social media services on how to mitigate polarisation—and in some cases companies have asked for politicians to define a potentially conflicted concepts, such as hate speech. However, political elites are less studied, as most scholars in human-computer interaction seem to focus on a citizen perspective [76]. Our work contributes to emerging literature in human-computer interaction focusing on political elites as information

and communication technology users and designers [rare but recent examples, see 66]. We see that studying political elites supplements the citizen-based understanding of use and design of online spaces for political engagement and discussion.

Our analysis is to find if members of different political party elites have differences about the design opportunities. In particular, we seek to identify differences which stem from political parties ideologies and technological frames which emerge in discussion [82]. If successful, this work will call out the *political nature of interfaces used for political engagement*. Our research is guided through the following research questions:

RQ1 How do political elites react to different design probes and their intervention mechanisms aim at mitigating political polarisation?

RQ2 How do these reactions relate to underlying values and ideologies political elites and their parties have?

These research questions require a basic background on party politics and its academic literature. To ensure that this literature is connected with our case, we will discuss this literature together when describing the research context (Section 3.1). Finally, as observed the scholarship has mostly had a citizen-centric view on interfaces for politics. We focus on a novel user group: political elites and ask

RQ3 What can political elites inform us about designing social media services?

3 DATA AND METHODS

We conducted semi-structured interviews among twelve members of the parliament or party officials chosen by political parties to examine how they perceive social media for political communication and how they react to different design opportunities to influence such communication. We used a set of eight design probes to engage them with alternative visions about the political discussions in social media. These interviews were then analysed using inductive qualitative analysis procedure. Next, we discuss the Finnish political context, the data collection process and design probes used during the data collection, as well as the data analysis process. Motivated by our research questions, the focus in this work has been to examine how the interviewees' perspectives of the design probes and interfaces differ due to their political perspectives.

3.1 Research context

Our choice to conduct this study in the Finnish context emerges from three factors present in Finnish society: first, political polarisation and strongly biased media outlets are rather novel phenomena in the society, second, Internet and social media use are high enough to make social media services relevant in political debate and last, its multiparty system allows versatile perspectives to co-exist and emerge in response to our research questions.

Finnish social and technology context. As a Nordic state, Finland has historically been characterized by a lack of contentious politics whereby few issues have polarized the public. Finland has been resilient toward political polarization. First, the country is characterized by high societal trust [21]. Second, the multiparty system requires political parties to co-operate. Furthermore, the country has high ethnic homogeneity and is characterized by Nordic values which manifest as high societal trust, including high trust among citizens and between citizens and the government [21]. The high ethnic homogeneity stands out even within several European counterparts and Nordic nations. Furthermore, Finnish politics has been consensus-driven and corporatist, that is, political parties and trade unions have negotiated together when larger social changes have been implemented. Their degree makes Finland different from other European and Nordic nations. These factors would contribute to a decrease of political polarization and provide a different historical context for

Acronym	Name	Seats	Founded in	Core ideology
CD	(1) Christian Democrats	5	1958	Christian democracy, social conservatism
CP	(2) Centre Party	31	1906	Centrism, Liberal conservatism, Agrarianism
FP	(1) Finns Party	39	1995	Right-wing populism, Finnish nationalism
GP	(2) Green Party	20	1987	Green politics, Social liberalism
LA	(1) Left Alliance	16	1990	Democratic socialism
MN	(0) Movement Now	1	2018	Market liberalism, Direct democracy
NCP	(2) National Coalition Party	38	1918	Liberal conservatism
SDP	(2) Social Democratic Party	40	1899	Social democracy
SPP	(1) Swedish People's Party	10	1906	Social liberalism, Swedo-Finnish interests

Table 1. Summary of party information. First column indicates acronym used in this study and number of interviewees from each party.

polarization. Indeed, few issues have polarized the Finnish public at a national level historically. That said, recent developments of immigration and an increase in asylum-seekers has increased polarization across the nation [10, 109]. This can be in part connected to the global increase of political populism [26, 58, 109, 114] and the importance of this issue to one political party [57].

The Internet is used on a daily basis by 79% of the population, 74% of people use it to read the news, 47% use social media services daily, and 11% use this channel for political or civic purposes. This said we acknowledge that social media use is somewhat biased towards people under 55, the more educated, and people in urban areas [96]. The most frequently used sources for political information are television news (considered a highly important or important politics-information source by 58% of citizens) and the newspaper (44%). The major news sources aim to provide high-quality journalistic products and have agreed to follow ethics guidelines for journalism. Strongly biased media sites are not part of Finland's mainstream media, nor do the main media outlets openly espouse any political stances. Social media channels serve as a major venue for political information for approximately 15% of the citizens [43]. This level of allows us to study social media and polarization in the first place.

Finnish political context. Finland uses a multi-party system and in December 2019 Ministry of Justice's list of registered parties had 18 political parties. From these 18 parties, nine parties have representatives in the parliament and five are currently part of the coalition government. Today, there exist four political issues that serve to divide the public: support for traditional values, cultural and social diversity, economic freedom, and economic equality [e.g., 110]. Still, these issues do not typically form strong dividing lines, since citizens can at the same time support economic freedom and economic equality [83, 101, 102, 110]. However, through analysis of voters' responses to attitude questions, each of the parties can be clearly distinguished (Figure 1) even when there is an overall trend of declining party identification [25]. To illustrate these aspects, Figure 1 positions

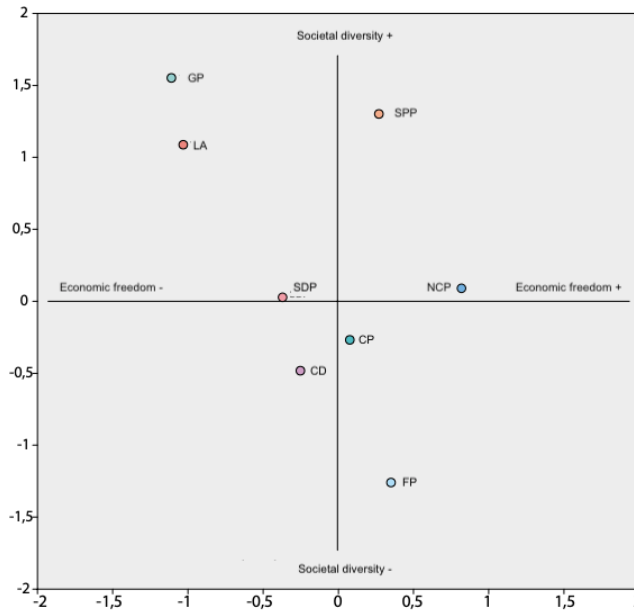


Fig. 1. Positions of political parties based on votes' responses in 2015 elections. Based on Westinen et al. [110].

the eight parties across these axis.¹ Similarly, the parties are divided by their stance on social and cultural diversity, focusing on traditional values or increasing national diversity in Finland.

The existence of nine parties suggests that the traditional spectrum of economics and freedoms itself is not sufficient to capture differences between these parties [as suggested in political sciences, see 46, 1–24]. Indeed, each of the eight parties has key issues which characterize them beyond these two dimensions [see Table 1 for details and for a more extensive account, please refer to 68, 100]. Following Downs et al. [31] Economic Theory of Democracy, new parties emerge if the established parties do not cover the whole ideological spectrum. This has been the case with the Green Party, Left Alliance, Christian Democrats and Finns Party. Furthermore, the Finns Party has characteristics similar to populist parties currently emerging in Europe: they have had a influential position in Finnish politics for less than ten years.

This said, parties are transforming from class or socio-economic status parties to catch-all-parties, seeking to become relevant to larger voter pools [e.g., 56, 64]. This is also true in Finland [100]. Another trend in party development has been from elite or mass parties to cartel parties [50]. For example, historically Social Democratic Party is driven by mass mobilization around suffrage and identity, therefore being a mass party – and National Coalition Party focused on smaller and more elitist politics. However, today parties instead seek to focus to limit the emergence of new parties through strategically seeking their ideologies. These developments are partly fueled by the professionalization of politics, leading to fewer grassroots and more centralized party organizations [32, 100]. This is the case also with Finnish political parties [3, 57]. However, the historic roots are

¹ We agree with Heywood [46, 18]: “such spectrums raise difficulties because they tend to simplify and generalize highly complex set of political ideas.” For an international audience, this provides a general overview of the Finnish party system, but as we show with Table 1, more detailed account is needed to understand the differences between these parties.

visible in the current values these parties focus on; and thus, are valuable in the interpretation of the findings.

3.2 Data collection and Analysis

Interviewee selection. We interviewed 12 actors from eight established Finnish political parties. This included two interviews from Center Party, Green Party, Social Democratic Party and National Coalition party (total of eight interviewees), and a single interviewees from Christian Democrats, Finns Party, Left Alliance, and Swedish People's Party.² The differences in numbers of actors per each party relate to party size (see Table 1 for number of seats). In Finland this has direct implications to the resources as the public funding of political parties used to run the party organization depends on the number of seats in the parliament. Larger parties have larger main offices and, on that account, they have potentially more perspectives on these issues. Therefore, for parties with more than 20 MPs, we asked the party offices to recommend two persons, while for parties with fewer MPs we only asked for one participant.

Participants were recruited by contacting the party head office and asking them to propose potential participants for a study on social media discussions. We believe that this process allowed each of the parties to choose a representative party considered to be most relevant for this study, either representing party's values and politics well, or being a party "spoke person" for academic studies like this. Based on the correspondence, parties seemed to highlight the experience of their proposed candidates in social media communication, thus suggesting they found the importance of domain experience important. This recruitment strategy led to a range of interviewees as different political parties proposed different actors: two were Members of the Parliament, one worked as assistant to the Members of the Parliament, and nine worked in the party head office in communications or political strategy functions, usually as head of communications or senior political strategy functions.³ Due to the relatively small number of potential participants, we will not provide more detailed demographics on our interviewees – it might make them identifiable in Finnish society.

This selection process ensured that all actors were affiliated with one of the parties and were familiar with party political positions, but also internal discussions, best practices and other insight knowledge as well. Furthermore, the professional role of each actor involved engaging with political discussions of social media by carrying out political communications or participating in political debates on different social media platforms. Therefore, they had first-hand experiences on the opportunities and challenges of social media discussions as well. Furthermore, they all had necessarily background to discuss about technology design.

Interview procedure. The interviews were semi-structured and consisted of four sections. The first two focused on providing us with the background of participants and their experiences. In the first section, we asked how participants and their party engages with political discussions of social media. In the second section, we asked questions to understand the ideal forms in the political discussions in social media and what possibilities and challenges social media produces for the representatives of political parties and for citizens. This study focuses on the third section. We asked the participants to comment on the eight different design probes (presented below) which

² See Table 1 for details on parties, we will use indicated party acronyms through the text. We excluded Movement Now, which had currently one MP because compared to older political parties, the new party did not have clear settled political status in the Finnish political landscape. We attempted to gain two interviews from the Finns Party, but due to time restrictions, this was not possible.

³ Note that the interviewee pool at elite level is small: even in large parties, the party head offices are usually around 20 persons for largest parties.

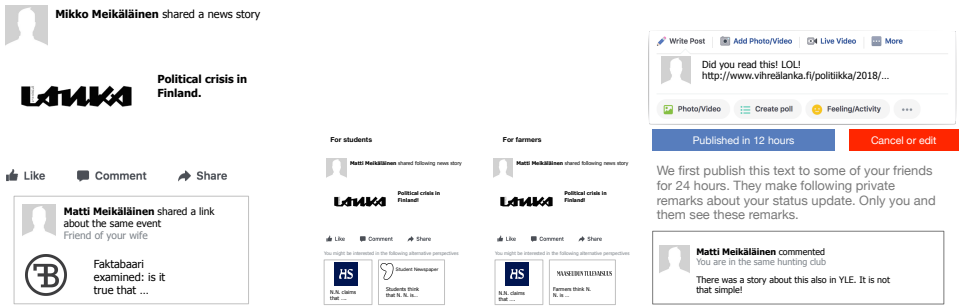
sought to support discussion about political news in social media. In particular, we requested the participants to (1) comment on what effects each probe could produce for political discussions, (2) what they understood to be designers' goals with each of the probes and (3) how their party might react to these probes and values and goals they presented. Each probe was presented separately and the interviewer asked all three questions for each probe. In the last section, we asked questions on the values in the political discussions of social media and perspectives of the regulation of social media platforms.

We chosen to use design probes, based on existing social media interface, as forms of provocative statements, which elicited reactions from interviewees. The eight design probes were non-functional user interface sketches, which manifested different approaches on how to mitigate online polarisation. Similar probes have been used previously to engage participants to reflect on the social and political impacts of new and emerging technologies [15, 78, 112]. As we have argued, these design probes are not value-free, but manifest different values [similar to all technologies, e.g., 15, 80, 111]. Design probes should be seen as low fidelity prototypes which allowed us to examine perceived roles as well as ideal roles technology ought to have in relation to polarisation [47, 63]. Therefore, the design probes allowed us to analyse socio-political values that surround technology use and design that might impact how people perceive and use socio-technical systems. Our use of design probes as part of the study is inspired by previous work on design fiction and speculative design [e.g., 6, 12]. There are many approaches within this broad design approach [14]: some use such tools as a tool for critique [e.g., 86], others use the approach to engage with users in a research through design-settings [2], and some to understand potential futures. In our work, the probes act as a tool for theory-driven understanding of today; similar to value statements used in social sciences, our probes are crafted to express provocative statements which are used in the interview process [78, 92, 107]. We see the probes as tools used to support the interview process. Therefore, our probes are not presentations about the future, dystopian, utopian or likely. Rather, our probes could be interpreted as *alternative presents* [6]; they utilise existing technology but apply different ideologies to provoke discussion on the contemporary social media designs.

We emphasize that our interviewees were part of the political elite. These elite interviews create additional considerations for the authors in terms of anonymity and time available [see e.g., 69]. The interviews lasted from one hour to two hours, on average 101 minutes. We started the study in July 2019 and completed it in December 2019. While we mostly used individual interviews, for two cases we used pair-interviews due to time restrictions. In these cases, the interviewer ensured that both participants were engaged in the discussions. We emphasized to the participants that they were interviewed as representatives of their political party. While we asked them to provide their personal views, the design probes section they were asked to comment on the ideas also from a wider perspective based on what they knew about their party.

With our sample of twelve interviewees, we observed saturation in the interviews: participants raised similar concerns or highlighted similar larger themes in the interviews. However, within these themes, the reasoning or justifications varied due to party backgrounds. That said, for each political party, the number of actors was small and might not present the views of the larger political groups—even when they were asked to engage specifically with party positions. Therefore, it is possible that the identified differences and positions might change if under a larger debate within the political party or if a formal manifesto expressing party positions would be written. We identify these challenges further in Section 5.3. Interviews were transcribed in verbatim for analysis.

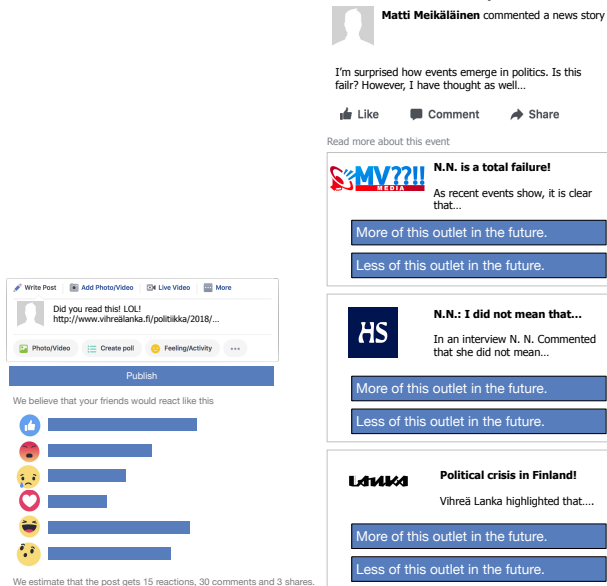
Design probes. We used eight design probes to examine reactions to potential directions to mitigate political polarization (see Figure 2). Each of the design probes was developed to manifest particular concepts and ideas on how to mitigate political polarisation and how news-centered



(d) Using social recommendation when proposing alternative content.

(e) Using demography based interest groups to target alternative content.

(f) Forcing considerations by laying the publication of a new post.



(h) Providing a user an explicit means to influence content recommendations.

Fig. 2. Design probes used in interviews. Interfaces translated in English.

political discussion takes place in online spaces. Loosely, we followed the concept-driven design approach [97]: design probes express insights emerging from previous research in material format, thus connecting the design probe to wider academic discussion on the topic. Given the context, we also choose to use concepts emerging from political science to design probes which manifested ideas how political parties relate to citizens, such as the difference between elite and mass parties [50] and differences between freedom and pluralism [110]. The first four probes previously used by [77, 78] on studying citizens' perceptions of mitigating polarization, allowing us to build on this baseline work. Beyond these, we deepened our perspective on the political nature of the interfaces and party politics and designed four more probes to examine particularly differences between the participants from different political parties. The latter four probes provide different mitigation strategies based on different idealizations of how to intervene users' behaviour, such as controlling or increasing users' freedom or highlighting social responsibility.

The first design probe (Figure 2a) encapsulates the common design agenda: it provides alternative media sources⁴ to supplement the shared opinionated news story and invites readers to examine alternative perspectives [78]. The following three probes (Figures 2b–2d) modify the first design probe to support Habermasian ideals of ideal role taking and well-informed discussion [78]. Variations include changing the target from the reader to the distributor of new information, thus supporting more informed initial posting of these perspectives (Figures 2b and 2c), and modifying the delivery mechanism to highlight alternative perspectives from other close friends and family members to highlight the existence of valid opinions (Figures 2c and 2d).

Other design probes provided alternative mitigation strategies. Many political parties in Finland have an interest group historically related to them. Figure 2e illustrates a perspective where social groups are explicitly used to target content relevant to their interests. For example, for farmers, the alternative news source included *Maaseudun tulevaisuus* (The Rural Future, see footnote 4 for details). This newspaper is published by agriculture advocacy group. Through this interface, we examined the relevance and social acceptability of explicit interest groups targeting in the alternative media source recommendations. Figure 2f illustrates a design probe where the content was initially only shared among a small group of friends and asking them to provide constructive critique and comments on the post. The content was made publicly available only after 24 hours. Previous research has suggested that the speed of social media communication limits reflective thinking [78]. This design probe manifested a solution to these problems by conducting a social and paternalist intervention. This probe examined the relevance and social acceptability of limiting personal expression in social media and developing peer-commenting to support expanding social discussions. Figure 2g presented an idea where the writer would immediately gain feedback of the reactions a social media post would likely generate in the audience. This probe examined how interviewees understood the importance of reactions, affectivity and circulation in political communication in the modern media environment. Finally, Figure 2h presented an interface which allowed explicit feedback on media outlets. A common critique about news feed recommendation algorithms is their lack of transparency [for example 39]. Such concerns also emerge when seeking

⁴ The media sources used correspond to well-known media sources in the Finnish media environment. *Vihreä Lanka* (or *Lanka*) is a newspaper published by the Green party; in Finland, many political parties publish own newspapers where stories relevant to their perspectives and accounts are presented. *Faktabaari* is a Finnish fact-checking site, similar to *Snoopes* in the United States. *Helsingin Sanomat* (or *HS*) is the national newspaper with the highest circulation and readership; it aims to be politically neutral. *MV-media* is an alternative news site focused on heavily re-framing mainstream media sources in areas such as migration politics, environmental politics and economics. *Ylioppilaslehti* is published by the student union of the University of Helsinki and has established importance in Finnish media, thus it is and often read not only by students but by journalists as well. *Maaseudun tulevaisuus* (literal translation: The Rural Future) is a newspaper published by the Central Union of Agricultural Producers and Forest Owners and focuses to raise and discuss issues relevant for agriculture and politics.

to mitigate political polarization [78]. This probe examined the importance and acceptability of transparency and individual choice in media environments by increasing users' agency.

Data analysis. We conducted an inductive qualitative analysis for the data [93]. First, both of the authors individually examined the transcribed interviews using open coding [98]. Following open coding, re-coding was conducted to abstract open codes. During this stage, codes were merged to generate meaningful larger categories. Finally, content in each category was re-read to examine the differences between political parties in detail. When required, additional open coding was conducted to ensure that these differences were visible in the data analysis. The authors met several times to discuss their interpretations, codes used and thematic categories relevant for the study. The interviews were interpreted together with background information of the actors and the political parties (see Table 1). When these are used in the Findings sections, they are explicit references. Furthermore, we examined the quotes used in the paper and ensured that we both agreed with the interpretations. This is to ensure that analysis represents not the personal opinions of each author, but a shared consensus agreement based on the data.

4 FINDINGS

4.1 Technology understanding among interviewees

Before moving further in our results, we will discuss briefly about the understanding of social media and technology among the interviewed participants. Our interviewees demonstrated that their parties had paid attention to think about politics in social media. Furthermore, these insights suggested that they could approach technology critically. All of them used social media in a professional context. They interpreted the design probes with reflective approach and compared the interfaces with existing social media service designs. For example, the participants paid attention to the details of the interfaces and discussed potential effects these systems could have:

[- -] quite small details [of the design] can make a difference to the political discussions (GP2)

We observed that the interviewees raised concerns about the technical feasibility of the proposed interfaces. This is not surprising as they were speculative in nature: their implementation would have required extensive natural language processing and understanding of perspective taking—still a future scenario in artificial intelligence research. Most importantly, they raised these technical aspects unprompted by our interviewer. For example, comments like the following occurred across all political parties.

It is hard to believe that computers could interpret the tones of the text, for example, irony or sarcasm, that well, so it could realistically estimate [the reactions of other users]. (LC)

The interviewees used technical jargon like “an algorithm” correctly to articulate their concerns. Their responses also suggested that they follow the increasing presence of critical tones (for example, critical algorithm, platform and data studies) in computing research – and the popular press. For example, a couple of the participants explained how recommendation systems could be a threat to democracy because of their imperceptible nature and demanded more transparency, thus citing well established line of thought.

I think that transparency is important. From the perspective of political discussions, it is a problem and a threat to democracy that you do not know why something is shown to you. (SDP2)

Overall, the participants saw that increasing political discussion and mitigating political polarization with interface designs is beneficial for society. However, as we suspected, disagreements

emerged about the possible effects of the designs, thus presenting underlying differences in how they assumed people act and are motivated in our society. We will now elaborate on these more extensively.

RQ1: Intervention mechanisms

During the interviews, we asked interviewees how they consider people might use or react to the design probes. We saw how participants from different political parties reacted to these design probes and interpreted the potential of the behavioural change mechanisms.

4.2 Intervention delivered through social engagement

Reactions on the speculative interfaces focused on utilizing social interaction as a mitigating effect (Figures 2c, 2d and 2f). Interviewees perceived their opportunities for behavioural change differently. Participants from more established parties seemed to consider that this type of interventions would *support* a more balanced discussion, accounting for different valid perspectives and accounts:

If your friend, your good and trustworthy friend has an opinion on the topic, it draws attention. If your friend has posted something, it makes you think that okay, I was going to share poor content and my friend has already noted that maybe things are not that simple. (NC1)

[Can you describe what has been the designer's goal with this design?] Maybe the goal is that your friends will come and help you to do a more balanced or considered post. [What do your party think about this goal?] I think that our party would agree with it. [Why do you think they would agree?] I think we can all agree that more thoughtful and versatile posts are better than less considered posts. (GP1)

In this case, the designer is probably hoping that the individual knows what the people around them think about the topic. In addition, it gives perspectives that your friends have not said. (NC2)

However, the Finns party representative considered that such interface might lead to conflicts among friends. Therefore, they were hesitant to recommend close social friends and instead suggested that if social contacts are used in the recommendation, they ought not to use close social friends due to the risk of conflict and stigmatization.

I think that it would be better if the alternative perspectives were not from your acquaintances. For example, it could show posts that have been popular on the topic. [Why do you think that would be better?] If you see posts from the people close to you, it could cause conflicts. If the alternatives were posts from popular individuals or popular posts, it would be more distant. (FP)

This said, we acknowledge that other interviewees raised concerns about social interventions as well. However, the concerns were not related to the social delivery mechanisms. For example, an interviewee from the Green Party highlighted that a social delivery mechanism might lead to “fear of missing out-phenomena” and thus lead to increased anxiety or even hook users to social media services. However, even these interviewees, while hesitant on the deployment of the mechanism did not consider the plan politically inappropriate.

4.3 Intervention through knowledge increase

Another direction in the design probes focused on increasing participants' knowledge through providing alternative perspectives (Figures 2a, 2b, 2e). This led to extensive discussions on how legitimate information is defined, which we elaborate more extensively in Section 4.4. Another

dimension in our interviews related to how participants thought the users might react when interacting through these design probes. Reactions to these were divided: some participants did not object to such interfaces – even while cautious about their potential – whereas others highlighted how facing information from a different perspective would lead to irritation, or cognitive dissonance, from readers’ perspective.

[-] diversification is a good thing but I feel that the writer might get annoyed if they get too extreme alternatives. (CD)

We all share and comment content based on the titles or introductory paragraphs and that way as social media users influence our community. If we would read other perspectives, maybe our actions would not be so black-and-white. People with better knowledge-base act better and this is an attempt towards it. (GP1)

4.4 Defining legitimate information

We intentionally included MV-media to the news recommendation. It is a news site often associated as “fake news” in Finnish media ecosystem (see footnote 4 for details). Thematically, MV-media is critical towards immigration and the prevalent political establishment, traits shared with the Finns Party. Our results indicate all participants from other parties, both in the left and right, were highly cautious about including MV-media to the recommendations.

It has been pointed out that, for example the MV-media’s content is not based on facts and part of it might be misinformation. I hope that any user interface would not share any content or journalism, which is not based on facts. I would not even call that as journalism, because I feel that it causes a big part of the problems that I have faced in our [party’s] social media. (SDP1)

If [the user interface] promotes this kind of fake news as alternative source side by side with Faktabaari and Helsingin Sanomat, it backfires the idea. There should be some kind of filter that does not pick this kind of content as an alternative perspective. (NC1)

We observed that the interviewees returned to this topic several times during the interviews, suggesting they felt strongly about this topic and objected using media sites seen as illegitimate in these systems. The Finns party interviewee formulated their objection differently. In person, they were against the media site and highlighted that no media source is neutral. However, they still thought that it might be interesting to many citizens.

I would hope that people would click the link of Helsingin Sanomat. I am disappointed with Faktabaari, because it has not turned out as neutral fact-checker and naturally, I would not recommend MV media to anyone. Surely, all of these would interest an ordinary citizen. (FP)

RQ2: Underlying values and ideologies

In regards to intervention mechanisms, it appeared that no large differences exist between the participants. However, in a detailed analysis of *motivations* and *reasons* in the interviewees’ reactions we observed larger variance between political parties. These related to values parties have perceived important to their own ideologies. We will now discuss three themes where we observed differences between the participants from different parties.

4.5 Paternalism and freedom

The first difference we observed related to the positive and negative feelings towards intervening people’s behaviour with interface design. Some participants felt strongly that some of the interfaces

were limiting political discussions and freedom of speech too much, whereas some others thought that depending on the context, too much freedom for the user is bad and occasionally limiting discussions and actions were seen as positive. Here we observed that participants' reactions related to their political background and context. These reactions were teased out through some design probes, which appeared to trigger more extensive reflection focused on guardianship and individual freedom in social media.

Figure 2f proposed that a time lag could be forced to limit and require participants to reflect their position. This design probe evoked different perspectives on power and control established through technology. Nobody was very pleased with the idea of a long time lag and everyone felt that 24-hour wait before publishing was too long and would limit excessively political discussions. That said, some of the interviewees thought that a shorter time lag might improve discussions and decrease impulsive negative posts and comments. Affirmative reactions seemed to emerge from participants of the left side of the political sector – but not consistently from all of them.

This 24-hour time lag is quite rough. If the time lag was shorter, it could be thought of as a good thing that people would consider before they post. (GP2)

[Would you think that shorter time lag could work?] I would say that in many cases, a one hour time lag would be good. (LC)

Other interviewees were more ambivalent on the idea. An interviewee from National Coalition party highlighted that being respectful towards others in social media is part of their bourgeois manner, therefore explicitly bringing up the party's historical position and role in the Finnish society. However, following more right-wing freedom ideas, they were cautious on implications of limiting personal expression in social media. They balanced these conflicting values by proposing a novel semi-paternalistic approach to apply this design probe:

If you could define when the time lag is on, for example, from 10 p.m. to 8 a.m. there would be a reconsideration period, so people could in the morning check what they have tried to post at midnight from the pub. (NC2)

Also, strongly negative perspectives emerged towards this design probe. The interviewees from the Centre Party and the Finns Party perceived that any form of time lag would limit the freedom of speech and therefore, harm political discussion. The Finns Party interviewee provided the strongest formulation of these concerns:

This is very custodial and I would say that it is almost like guiding children. I would say that nobody would be very pleased about this. [What do you think about your party would think about this?] They would be very negative about it. [Why so?] Because we value the freedom of speech and free discussions more. We believe that people are capable of searching for information on their own and deciding what they want to share and when. (FP)

Similar concerns were raised with design probe providing users to change to explicitly manipulate the news feed recommendations (Figure 2e). Conflict emerged between freedom and ability to use the technology to develop a more pluralistic social media, that is, if a user should be given such freedom or if the proposed approach would be harmful for the user. Careful considerations of bringing these two aspects up were clearly present in the interviewees' comments. Across the parties, many interviewees thought that giving more control to the user is a good thing, but it contests the plurality of social media.

I would see it as positive if the user had some possibilities of choice. But in the perspective of deliberative democracy, this might cause filter bubbles and I wonder if this would enrich the quality of the discussions. If the goal is to have polyphonic and

diverse social media, would this promote discussions where people could learn from each other and then achieve common goals? However, for users, this might be okay. (CD)

However, participants from parties which have a higher support for cultural and social diversity suggested that plurality of media accounts should be enforced. These interviewees were most concerned that a design direction like this would lead to situations, where people are even more in their filter bubbles and only reading and following like-minded media sources. Therefore, allowing users to hide media sources should be limited to ensure cultural and social diversity:

[Would you like to change something about this?] I would remove these "more of this magazine" and "less of this magazine" [buttons]. (SPP)

I would prefer that there would be only this "more of this magazine" [button] but not the "less of this magazine". If you would like to see all of the content that Vihreä Lanka publishes, I would see that as positive. But this is overall confusing. (SDP1)

Participants observed that such design might increase transparency and users' knowledge about news recommendation systems. Therefore, it was suggested this design would also increase people's knowledge about polarization and filter bubbles in social media. However, the participants also commented that right now social media works imperceptibly in a similar way and showing its logic might not have any effect but is not either harmful for the users.

The observations from these two design probes show how political ideologies may influence on proposed mitigation strategies. The discussion of economic and personal freedom and cultural and social plurality are dividing the Finnish political map (recall Figure 1). Those ideologies were present when the participants provided detailed commentary and critique on these design probes. Thus, while across the interviewees there was mostly consensus that knowledge increase would be beneficial and more considered and thoughtful posts would improve political communication, the way these goals are implemented have different levels of political acceptability.

4.6 Communality

Political parties have historically particular interest groups and communities related to them which have provided them with a strong vote base. Even while partisanship is now decreasing [25], these roles are still strongly present. In Finland, the Centre Party has historically advocated the interests of individuals living in rural areas and promotes a decentralized society and local communities (see Table 1). The importance of local communities was present in the answers both of the Centre Party's interviewees. They were most positive about design probes that they thought to increase the sense of belonging between people. Furthermore, they stated that socially and communally oriented design goals would be aligned with their party's values.

I think that this aims for engagement. There is a lot of users on social media sites, who feel lonely. With this, they can see better how others are doing. This shows other's opinions. Kind of "micro-discussions". (CP1) [How would your party react to these goals?] I think this highlights the value of commonality and we see that as positive. (CP2)

This is suitable for our values (CP1) If we list our values, there is freedom, there is responsibility, this emphasizes caring, there is a community and this treats the different perspectives equally. (CP2)

Similarly, political parties have been historically evolving from a focus on elites (cadre parties) or as mass-based parties [50]. In Finland, the Social Democratic Party has historically had more mass-based party dynamics and a strong link with labour unions [68]. Following these mass-based party

ideals, interviewees representing such parties were positive towards the interest-group focused design probe (Figure 2h) and commented that giving interest group's viewpoint, the user would have important information to advocate his or her rights.

It is good that people have the information. For example, if somebody is a farmer, it is good that they have information on the topic from their context, so that they can advocate their rights. At the same time, it is important that you can see things from other perspectives as well. (SDP2)

Those opposing these types of interventions highlighted how the designs may lead to even stronger development of "echo chamber" or "filter bubbles." They argued that people naturally surround themselves with like-minded individuals and therefore, the interfaces based on commonality might separate people and political discussions even more and increase political polarization.

4.7 Informed decision-making

Finally, while there was a general preference towards more informed discussion in most interviews, the preference seemed to be more important for the interviewees of parties that have higher education votes: the Green Party, Left Alliance, and National Coalition Party [108]. The preference of knowledge increased design probes over social engagement interventions emerged from the understanding that their party believes in fact-based discussions and science.

We – at least our party's active people, who I know – are academic-oriented people. We believe that increasing knowledge always does good. (GP1)

On many occasions, I have thought that can we just discuss as the facts say. Then, we can accept that not everybody has the same opinions but I accept that and they can still be good people. [What your party think of this?] Since the beginning the National Coalition's ideology has been to bring different perspectives together. (NC1)

The comment from the interviewee of National Coalition Party highlighted the relativity of legitimate information. Rather, they sought to support individual evaluation – even using original sources as evidence – to support both personal freedom and knowledge-backed political engagements. Thus, the comment shows not only how parties' voters influence these decisions but also how such pragmatic perspectives are tied together with other ideological accounts as well.

RQ3: Political elites' perspectives on social media

On several occasions, the interviewees highlighted how proposed design changes would challenge their ability to communicate about politics. We observed that these concerns highlight design constraints of political interfaces, beyond values and ideologies examined above. However, unlike in the two categories examined above, we did not observe disagreements between party lines in these reactions. Rather, these concerns were presented rather unanimously in all interviews.

Partly their reactions expand established scholarship on how individuals use and consider social media. For example, *managing impressions* and *maintaining profile* were critical in their responses. These themes have been widely examined in social computing scholarship [among others, 16], building on top of classics like Goffman [41]. However, in this issue, the interviewees were not concerned about privacy, information disclosure, context collapse or discussed advanced targeting tools to allow them to communicate to sub-populations of their social media followers – which are major concerns in studies among ordinary citizens [see for example reviews 16, 19, 116]. Rather, the challenges on impression management emerged against the platform: when content was presented with alternative platform-chosen content (such as Figures 2a and 2e), interviewees raised concern that their political message could be interpreted to support *also* the content suggested by the

platform. Thus, they were concerned if their comments would be seen to advocate content they do not endorse.

For the perspective of our representatives, they do not want that their posts are associated with links that they disagree with. (SDP1)

Concerns were also raised in relation to political practices. The participants brought up particular demands of political communication. The participants' reactions to time lag in posting (see Figure 2f) were mostly negative. The interviewees were concerned it would delay their ability to express political opinions on "hot" topics, and highlighted how reaction speed is essential for these topics.

What is a short time? Sometimes I feel that if you post something to Twitter, somebody has reacted to it after 10 seconds. In my opinion, every kind of time lag – 24 hours, 12 hours, hour, or ten minutes – are too long. (CP1)

In my work, this would be useless. [Why it would be useless?] For example, if the Finnish prime minister says something that we need to react immediately, this media is not usable for that. [Would you feel that this kind of social media would be usable if the time lag was shorter?] To some extent, yes, but I would prioritise other [platforms], where I could publish the response immediately. A system that would publish handouts only next day would be worthless. I would not use it but delete it and find a new one. (GP1)

Similarly, the interviewees observed that tools which predicted potential reactions (see Figure 2g) are interesting for politics as well. However, the interviewees were cautious about how they articulated their perspectives on these as they acknowledge that while it could lead to political gains, it might not be good for political discussions overall. This may suggest that there are underlying norms of political communication in social media space as well, such as avoiding optimizing the affective reactions knowingly.

If these estimates were correct, possibly many would create posts in a way that they would get reactions, shares, and comments, as much as possible. I do not believe that it would create better social media posts but maybe those would spread out more. It depends on the person. If the person's most important goal is to spread out their content, maybe this would be useful to them. (FP)

I do not like this. It would be useful in my work, especially this [estimate of the number of reactions]. If I could buy this as an expansion, I would buy this. [So, do you think that for a political party's communication this would be a good thing?] Yes, for a party's communications this would be good but for the society, this would be very bad. (SPP)

This kind of responses demonstrated how interviewees experienced that social media platforms are critical in their communication. Partly this related to lack of gatekeeping in social media platforms, which allows them to immediately communicate with the public and engage with them. However, underlying them is acknowledging that media system is *hybrid* [i.e., traditional and newer media influence each other, see e.g., 22]. Therefore, the critical role of social media platforms did not emerge only from the lack of gatekeeping: rather as social media is linked with traditional media, reactions and speed can support media exposure.

5 DISCUSSION

Computer scientists have increasingly acknowledged that values, politics and ethics are essential in computer science education and research [106]. Human-computer interaction and social computing scholars have either focused on feminism, post-colonialism and other critical approaches to examine how politics is embedded with technologies [51] or engaged to examine how technology could

help civic society to more deeply participate in political debate and action [for review, see 76]. However, previous work has used institutionalized party politics only as a control variable in the research design, checking if intervention results uphold across different political leanings. Our work presents a different take on party elites and party politics in human-computer interaction scholarship and in particular, interface design: our work was fuelled to understand frictions across party alignments.

Our findings draw out initial insights on how political parties have different takes on interfaces designed to mitigate political polarisation. Our results demonstrate how political elites' reflections on design probes emerge from historical developments and were deeply rooted in the values political parties have: the Centre Party emphasized communality (Section 4.6), the Social Democratic Party highlighted mass-movement based politics (Section 4.6) and paternalism (Section 4.5) and the National Coalition Party highlighted freedom in their responses (Sections 4.5 and 4.7). The historical background creates a wider context from which our interviewees created interpretations and assumptions on the potential of our design probes.

Our work suggests that interface design researchers and practitioners should evolve their practices to account party politics in interfaces when linked to democratic and political processes. In our review of the previous work, we showed that scholars working on interfaces integrated into political processes, such as discussion, media reading or even decision-making rarely acknowledge how (political) values and beliefs are embedded into their work. Our initial findings suggest that there are strong conflicting perspectives (like paternalism and freedom) which must be accounted for in these systems. A common solution to conflicting perspectives among users is to bring in their experience, knowledge and values into the design work. That is, one can apply participatory design approaches. However, as political values can be deeply rooted and conflict rising across the ideological spectrum, we are sceptical on the outcomes and therefore, the potential benefits of this type of intervention.

Another design direction is to investigate adaptive systems for political discussions. Already now we use other highly personal attributes, such as personality [81], to deliver user interface adaptations. However, when using political stances for adaptive user interfaces, we believe the question is not if it can be done, but rather should it be done. Extensive work has shown that interfaces shape user behaviour and emotional state [among many others 88, 94]. Thus, if we adapt interfaces for political discussion, we acknowledge and even drive for different user behaviours in political discussion. This might lead to further separation of citizens in political topics, as the user experience and actions might differ. Therefore, while we argue that there is a need to develop practices and acknowledge party politics in interface design, further research is required to understand the pros and cons of the different approaches to acknowledge the political realm of these kinds of interfaces.

To conclude, this paper provides two contributions to interface design work: first, we call for conceptual expansion of technology frames to understand how different frames exist in the society and second, we call out how ethical questions emerge for practitioners. Underlying there is a need to acknowledge the importance of party politics when researching and designing interfaces for political discussions and expression. To help in this work, we propose that human-computer interaction scholars and practitioners seek to more deeply engage with political sciences to use their knowledge about parties and their roles to understand and potentially mitigate conflicts which may emerge. This work took initial steps towards this direction. We took advantage of different party types (such as elite, mass, and catch-all parties, [50]) and versatile political ideologies (see Table 1) in our analysis, showing its utility to understand the frictions emerging.

5.1 Why we should study up in social computing research?

Our research was studying up, or examining elites within political structures to understand how they reflect social media services. As we observed, via this approach we could speak more deeply about the political perspectives considered when designing social media services. We are not advocating that their wishes about interfaces should be implemented *as-is*. The overarching aim for any work which seeks to study up is not to give more power to the elites, but rather examine and discuss how elites behave—like we have done. This said, we believe that the work also gives new perspectives to topics studied by social computing scholars, highlighting that elite perspective helps us to reflect about our previous theoretical apparatus and help to rethink them.

For example, our participants highlighted the importance of impression management even for such elite users. However, compared to traditional (and albeit somewhat older research) impression management and profile work, we observed a novel nuance in their responses. Traditionally we have examined challenges emerging from users' actions and inactions, presenting self to various different social groups and automated profile presentations. For our elites, the challenge of impression management does not only emerge from the user activities, but expands also to discuss how the content is framed and contextualized by the service. They highlighted how profile work takes place in a complex algorithmic system, including humans and code. For our interviewees, profile work is no longer individual, but rather is a combination of posters' profile work, spectators' profile work (such as choosing friendships, following media outlets etc.) and autonomous algorithmic analysis of the system. In the modern data-driven approaches, individuals also interact with computers without their knowledge [23], complicating the nature of profile work. Our interviewees were very conscious about the profile work and impression management they do and what effects social media platforms might have on it. Therefore, we suggest that these elite users are indeed lead users in profile work of present day more complex social media environment. Further research of profile work in increasingly autonomous algorithmic systems is warranted.

Second, when our elites spoke about values and articulated (when prompted) interfaces through these kinds of lenses, it could be said that the technology was framed by political values. Traditionally when examining technology frames, scholars have explored organizations, referring to workplaces or social groups. In these contexts, technology frames are used to understand how user groups within the organization perceived technology and what are the reasons for such framing [e.g., 52, 82, 103]. Our research provides suggestive evidence that these technology frames may also be present in larger groups, such as nation states. It appears that party context is a rich source for values and assumptions on human behaviour, as our interviewees demonstrated. Therefore, users' political leaning can direct their perception of the technology and motivations behind a system design. Further research exploring political leaning and acceptability of different design ideas or even more explicitly the frames given to technology may be warranted. If effects are observed, they could be similar to original studies from Orlikowski and Gash [82]: different groups might demonstrate scepticism towards systems or embed assumptions about the role of technology. Such beliefs have clear implications on how the technology is perceived to be used and which design directions are perceived worth pursuing. Technological frames based on party identity (or other aspects of identify politics) may impact how technologies are taken into use.

Both of these ideas emerged from focusing to study up, examine how elites perceive technologies. The results do not mean that we should rethink profile work or technology frames immediately. Rather, it indicates that researchers can rethink some concepts by using elites as a special group whose perspectives may fruitfully expand concepts we have used to study ordinary people.

5.2 Economical and political interests in the design of social media

Contemporary scholars have highlighted how platform companies have power and can therefore be dangerous for democracy. Social and search media platforms are under heavy investigations, their power is prominently discussed in the literature, and scholars discuss how economic interest run the design of such systems [among many others, see 38, 40]. Our results speak on the other side of the coin: how political interest groups could seek political gains through these interfaces.

Our results provide initial support on seeking such gains by supporting approaches which seem to also relate to political stances. Most prominently this was present in the extensive discussion on legitimate information sources (Section 4.4) showed how our interviewees conducted politics through classification work, seeking to limit information sources they (and their parties) found questionable. The results may be more versatile in other countries, like the U.S., where many journalistic media are less politically neutral. However, the choice about legitimate information which can be distributed and recommended allows parties to choose or limit outlets they consider not supporting their agenda and perspectives.

Second, we also observed indicators that interviewees highlighted how an interface may support forms of participation that are beneficial for their party's supporters. For example, participants from political parties whose voters most often have a higher education degree saw value in more evidence-based and information-driven political discussion (Sections 4.3 and 4.7), even suggesting that beyond media, the system could recommend original research. We remind that such ideas might limit the political expression and participation from less-educated citizens, who might not be used to evidence-based argumentation.

Based on these examples we can envision that social media service designs can strengthen cartel parties [50]. Cartel parties use the resources from the state to maintain its position and limit potential competition. Limiting operations of social media services, increasingly critical for political expression, is one potential way to limit competition. The extreme case of such behaviour would be explicitly strategic, such as gerrymandering in the United States. While our results did not indicate this is a strategy in use, we highlight the opportunities for digital gerrymandering. In digital gerrymandering political parties would manipulate the design of social media so that it would favour a party or class in their participation to public discourse. The impacts would not be as drastic as in traditional gerrymandering, where the boundaries of an electoral constituency are drawn to favour one party or class. However, strategically excluding less-supportive voices from social media services could lead to changes in media agenda, public discussion and have similar kind of implications as choosing ones representatives.

With this digital gerrymandering we highlight that commercial entities are not the *only* actors who might have an interest to strategically support their interests through interface design and mechanisms. This is troubling as recently there have been increasing demands for the governments to regulate these companies. Our results tentatively indicate that these regulators as political actors might supplement companies' *economic* interests with interests for *political power*. Therefore, we recommend careful and balanced consideration of how digital space is regulated to ensure it does not just lead to replacing one form of interests driving the design agenda with another form of interests.

5.3 Limitations and Future research

Like any study, this research has limitations which set limits on its generalizability. First, while interviews saturated in themes which emerged, indicating that additional interviews are unlikely to provide additional perspectives, per party the number of informants was one or two. Therefore, we did not capture what disagreements may appear within the parties: potentially, additional

interviews would provide more diverse perspectives. This said, these differences could be attributed to further ideological divisions which take place within a single party; therefore, the main argument that political ideologies have implications to interface design would remain stable, while a richer account would be given. Similarly, studying the Finnish context means that single results on preferences of left leaning or right leaning parties (or, any other political ideologies) should not be generalized. Instead, additional studies would be required across countries to examine how parties differ and provide insights for building a more extensive model to inform interaction designers and scholars.

Second, our research approach focused on elites only and omitted citizens' perspectives from the analysis completely. Naturally, political elites seek to represent the opinions of citizens, thus the approach has some merits. However, it is unclear how well they can do it in regards to technology design. Therefore, additional research is needed to understand what kind (if any) differences emerge in citizens' technology frames when examining interfaces for political participation and comparing these across party alignments. This approach might yield different results as overall political parties' role and citizens' attachment to parties have been decreasing. Interesting opportunity here could be to seek to integrate these design probes into survey research, which would also allow a larger sample size compared to traditional interview-based qualitative studies.

Third, the design probes naturally limit how and what participants commented during the interviews. Even further designs, potentially drawing more closely from political science literature and being hypothesis-driven could help us to map the party positions more explicitly. Alternatively, to allow more freedom for participants, design sessions with party officials and MPs could help to gather similar types of data, which could be analysed using the same methodology as we used in this work.

While these limitations have implications on the generalizability of our research, we believe that discussed findings regarding the importance of political ideologies and historical context, the concerns of digital gerrymandering, and existence of special demands for impression management are not dependant on our data collection process. Therefore, we invite further scholar engagement with the political study of interfaces used for political discussion.

6 CONCLUSIONS

Our work acknowledged that generally human-computer interaction scholars acknowledge that values are embedded to any technologies they developed [80, 111] and have developed several approaches to account for this in their work [e.g., value-sensitive, participatory and speculative design approaches; 11, 14, 34, 49, 70, 112]. However, when human-computer interaction scholars design systems for political participation and engagement, these critical considerations are less prominently present. In this work, we identified how politics may present itself in these domains and discussed the democratic implications of these. Our analysis shows that political values and ideologies can be seen in reactions to both to exact delivery mechanisms as well as deeper underlying values technologies may manifest. For example, some members of political elites preferred more paternalistic values while others highlighted the importance of freedom. Second, we suggested that studying political elites instead of (ordinary) users provides insights which may help to move theoretic discussion forward. Based on our results, we discuss how challenging landscape designing for politics is given the diverging values in society and discuss challenges and benefits of particular design directions. Our results provide a starting point to balance the discussion on design of social media platforms. Today, many discussants highlight that platforms' economic interests drive their choices and ask for alternative approaches. However, involving governments regulation directly could make the design open for political interests. These discussions invite additional scholarship

on potential design approaches which consider the party politics as well as more empirical research on political ideologies in the design and acceptability of digital systems.

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REFERENCES

- [1] Tanja Aitamurto and Jorge Saldivar. 2017. Motivating Participation in Crowdsourced Policymaking. *Proceedings of the ACM on Human-Computer Interaction* 1, CSCW (12 2017), 1–22. <https://doi.org/10.1145/3134653>
- [2] Aloha Hufana Ambe, Margot Brereton, Alessandro Soro, Laurie Buys, and Paul Roe. 2019. The Adventures of Older Authors. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19*. ACM Press, New York, New York, USA, 1–16. <https://doi.org/10.1145/3290605.3300588>
- [3] David Arter. 1999. From class party to catchall party?: The adaptation of the Finnish Agrarian-Center Party. *Scandinavian Political Studies* 22, 2 (1999), 157–180. <https://doi.org/10.1111/1467-9477.00010>
- [4] Mariam Asad and Christopher A. Le Dantec. 2017. Tap the "Make This Public" Button. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*. ACM Press, New York, New York, USA, 6304–6316. <https://doi.org/10.1145/3025453.3026034>
- [5] Mariam Asad, Christopher A. Le Dantec, Becky Nielsen, and Kate Diedrick. 2017. Creating a Sociotechnical API. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*. ACM Press, New York, New York, USA, 2295–2306. <https://doi.org/10.1145/3025453.3025963>
- [6] James Auger. 2013. Speculative design: Crafting the speculation. *Digital Creativity* 24, 1 (2013), 11–35. <https://doi.org/10.1080/14626268.2013.767276>
- [7] Y. M. Baek, M. Wojcieszak, and M. X. Delli Carpini. 2011. Online versus face-to-face deliberation: Who? Why? What? With what effects? *New Media & Society* 14, 3 (9 2011), 363–383. <https://doi.org/10.1177/1461444811413191>
- [8] Christopher A. Bail, Lisa P. Argyle, Taylor W. Brown, John P. Bumpus, Haoan Chen, M. B. Fallin Hunzaker, Jaemin Lee, Marcus Mann, Friedolin Merhout, and Alexander Volfovsky. 2018. Exposure to opposing views on social media can increase political polarization. *Proceedings of the National Academy of Sciences* 115, 37 (9 2018), 9216–9221. <https://doi.org/10.1073/pnas.1804840115>
- [9] E. Bakshy, S. Messing, and L. A. Adamic. 2015. Exposure to ideologically diverse news and opinion on Facebook. *Science* 348, 6239 (6 2015), 1130–1132. <https://doi.org/10.1126/science.aaa1160> arXiv:gr-qc/9809069v1
- [10] Åsa Bengtsson, Kasper Hansen, Ólafur Þ Harðarson, Hanne Marthe Narud, and Henrik Oscarsson. 2013. *The Nordic voter: myths of exceptionalism*. Ecpr Press.
- [11] Erling Björgvinsson, Pelle Ehn, and Per-Anders Hillgren. 2012. Design Things and Design Thinking: Contemporary Participatory Design Challenges. *Design Issues* 28, 3 (2012), 101–116. https://doi.org/10.1162/DESIGN_ja_00165
- [12] Mark Blythe. 2014. Research Through Design Fiction. In *Proceedings of the 32nd annual ACM conference on Human factors in computing systems - CHI '14*. ACM Press, New York, New York, USA, 703–712. <https://doi.org/10.1145/2556288.2557098>
- [13] Mark Blythe, Kristina Andersen, Rachel Clarke, and Peter Wright. 2016. Anti-Solutionist Strategies: Seriously Silly Design Fiction. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*. Association for Computing Machinery, New York, NY, USA, 4968–4978. <https://doi.org/10.1145/2858036.2858482>
- [14] Mark Blythe and Enrique Encinas. 2016. The co-ordinates of design fiction: Extrapolation, irony, ambiguity and magic. *Proceedings of the International ACM SIGGROUP Conference on Supporting Group Work 13-16-Nove* (2016), 345–354. <https://doi.org/10.1145/2957276.2957299>
- [15] Mark Blythe, Enrique Encinas, Jofish Kaye, Miriam Lueck Avery, Rob McCabe, and Kristina Andersen. 2018. Imaginary Design Workbooks. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems - CHI '18*. ACM Press, New York, New York, USA, 1–12. <https://doi.org/10.1145/3173574.3173807>
- [16] danah boyd, Nicole B. Ellison, danah m. boyd, and Nicole B. Ellison. 2007. Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication* 13, 1 (10 2007), 210–230. <https://doi.org/10.1111/j.1083-6101.2007.00393.x>
- [17] David L Brinker, John Gastil, and Robert C Richards. 2015. Inspiring and Informing Citizens Online: A Media Richness Analysis of Varied Civic Education Modalities. *Journal of Computer-Mediated Communication* 20, 5 (9 2015), 504–519.

- <https://doi.org/10.1111/jcc4.12128>
- [18] Phil Brooker, John Vines, Selina Sutton, Julie Barnett, Tom Feltwell, and Shaun Lawson. 2015. Debating Poverty Porn on Twitter. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems - CHI '15*. ACM Press, New York, New York, USA, 3177–3186. <https://doi.org/10.1145/2702123.2702291>
- [19] R. Caers, T. De Feyter, M. De Couck, T. Stough, C. Vigna, and C. Du Bois. 2013. Facebook: A literature review. *New Media & Society* 15, 6 (9 2013), 982–1002. <https://doi.org/10.1177/1461444813488061>
- [20] Michael X. Delli Carpini, Fay Lomax Cook, and Lawrence R. Jacobs. 2004. Public Deliberation, Discursive Participation, and Citizen Engagement: A Review of the Empirical Literature. *Annual Review of Political Science* 7, 1 (2004), 315–344. <https://doi.org/10.1146/annurev.polisci.7.121003.091630>
- [21] Manuel Castells and Pekka Himanen. 2002. *The information society and the welfare state: The Finnish model*. Number 250. Oxford University Press on Demand.
- [22] Andrew Chadwick. 2013. *The Hybrid Media System: Politics and Power*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199759477.001.0001/T1textbackslashr10.1093/acprof:oso/9780199759477.003.0001>
- [23] Rob Comber, Airi Lampinen, and Jesse Haapoja. 2019. Towards Post-Interaction Computing: Addressing Immediacy, (un)Intentionality, Instability and Interaction Effects. In *Proceedings of the Halfway to the Future Symposium 2019 on - HTTF 2019*. ACM Press, New York, New York, USA, 1–8. <https://doi.org/10.1145/3363384.3363477>
- [24] Eric Corbett and Christopher A. Le Dantec. 2018. Exploring Trust in Digital Civics. In *Proceedings of the 2018 on Designing Interactive Systems Conference 2018 - DIS '18*. ACM Press, New York, New York, USA, 9–20. <https://doi.org/10.1145/3196709.3196715>
- [25] Russell J Dalton. 2002. *The decline of party identifications*. Oxford University Press, 19–36.
- [26] Russell J Dalton. 2008. The quantity and the quality of party systems: Party system polarization, its measurement, and its consequences. *Comparative Political Studies* 41, 7 (2008), 899–920.
- [27] Christopher A Le Dantec and Carl DiSalvo. 2013. Infrastructuring and the formation of publics in participatory design. *Social Studies of Science* 43, 2 (2013), 241–264.
- [28] Carl DiSalvo. 2009. Design and the Construction of Publics. *Design Issues* 25, 1 (1 2009), 48–63. <https://doi.org/10.1162/desi.2009.25.1.48>
- [29] Carl DiSalvo. 2012. *Adversarial Design*. MIT Press.
- [30] Abraham Doris-Down, Husayn Versee, and Eric Gilbert. 2013. Political blend. In *Proceedings of the 6th International Conference on Communities and Technologies - C&T '13*. ACM Press, New York, New York, USA, 120–130. <https://doi.org/10.1145/2482991.2483002>
- [31] Anthony Downs et al. 1957. *An economic theory of democracy*. Harper, New York.
- [32] David M Farrell and Paul Webb. 2002. *Political parties as campaign organizations*. Oxford University Press, 102–128.
- [33] Richard Fletcher and Rasmus Kleis Nielsen. 2018. Are people incidentally exposed to news on social media? A comparative analysis. *New Media & Society* 20, 7 (7 2018), 2450–2468. <https://doi.org/10.1177/1461444817724170>
- [34] Batya Friedman, Peter H. Kahn, and Alan Borning. 2009. Value Sensitive Design and Information Systems. In *The Handbook of Information and Computer Ethics*. John Wiley & Sons, Inc., Hoboken, NJ, USA, 69–101. <https://doi.org/10.1002/9780470281819.ch4>
- [35] Mingkun Gao, Hyo Jin Do, and Wai-Tat Fu. 2018. Burst Your Bubble! An Intelligent System for Improving Awareness of Diverse Social Opinions. In *Proceedings of the 2018 Conference on Human Information Interaction & Retrieval - IUI 18*. ACM Press, New York, New York, USA, 371–383. <https://doi.org/10.1145/3172944.3172970>
- [36] Kiran Garimella, Gianmarco De Francisci Morales, Aristides Gionis, and Michael Mathioudakis. 2017. Reducing Controversy by Connecting Opposing Views. In *Proceedings of the Tenth ACM International Conference on Web Search and Data Mining - WSDM '17*. ACM Press, New York, New York, USA, 81–90. <https://doi.org/10.1145/3018661.3018703>
- [37] Homero Gil de Zúñiga, Brian Weeks, and Alberto Ardévol-Abreu. 2017. Effects of the News-Finds-Me Perception in Communication: Social Media Use Implications for News Seeking and Learning About Politics. *Journal of Computer-Mediated Communication* 22, 3 (5 2017), 105–123. <https://doi.org/10.1111/jcc4.12185>
- [38] Tarleton Gillespie. 2010. The politics of 'platforms'. *New Media and Society* 12, 3 (2010), 347–364. <https://doi.org/10.1177/1461444809342738>
- [39] Tarleton Gillespie. 2014. The Relevance of Algorithms. In *Media Technologies*. The MIT Press, 167–194. <https://doi.org/10.7551/mitpress/9780262525374.003.0009>
- [40] Tarleton Gillespie. 2017. Algorithmically recognizable: Santorum's Google problem, and Google's Santorum problem. *Information, Communication & Society* 20, 1 (2017), 63–80. <https://doi.org/10.1080/1369118X.2016.1199721>
- [41] Erving Goffman. 1959. *The presentation of self in everyday life*. Doubleday.
- [42] Todd Graham. 2012. Beyond "Political" Communicative Spaces: Talking Politics on the Wife Swap Discussion Forum. *Journal of Information Technology & Politics* 9, 1 (2012), 31–45.
- [43] Kimmo Grönlund. 2016. Eduskuntavaalit 2015. In *Poliittisen osallistumisen eriytyminen. Eduskuntavaalitutkimus.*, Kimmo Grönlund and Hanna Wass (Eds.). Ministry of Justice, Finland.

- [44] Libby Hemphill, Aron Culotta, and Matthew Heston. 2016. #Polar Scores: Measuring Partisanship Using Social Media Content. *Http://Dx.Doi.Org/10.1080/19331681.2016.1214093* 00, 00 (2016), 1–13. <https://doi.org/10.1080/19331681.2016.1214093>
- [45] Libby Hemphill and Andrew J. Roback. 2014. Tweet acts: how constituents lobby congress via Twitter. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing - CSCW '14*. ACM Press, New York, New York, USA, 1200–1210. <https://doi.org/10.1145/2531602.2531735>
- [46] Andrew Heywood. 2017. *Political ideologies: An introduction*. Macmillan International Higher Education.
- [47] Stephanie Houde and Charles Hill. 1997. What do Prototypes Prototype? In *Handbook of Human-Computer Interaction*. Elsevier, 367–381. <https://doi.org/10.1016/B978-044481862-1/50082-0>
- [48] Kokil Jaidka, Alvin Zhou, and Yphtach Lelkes. 2019. Brevity is the Soul of Twitter: The Constraint Affordance and Political Discussion. *Journal of Communication* 69, 4 (2019), 345–372. <https://doi.org/10.1093/joc/jqz023>
- [49] Peter Kahn and Batya Friedman. 2007. Human Values, Ethics, and Design. , 1241–1266 pages. <https://doi.org/10.1201/9781410615862.ch63>
- [50] R. S. Katz and P. Mair. 1995. Changing Models of Party Organization and Party Democracy: The Emergence of the Cartel Party. *Party Politics* 1, 1 (1 1995), 5–28. <https://doi.org/10.1177/1354068895001001001>
- [51] Os Keyes, Josephine Hoy, and Margaret Drouhard. 2019. Human-Computer Insurrection. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19*. ACM Press, New York, New York, USA, 1–13. <https://doi.org/10.1145/3290605.3300569>
- [52] Charles Kiene, Jialun Aaron Jiang, and Benjamin Mako Hill. 2019. Technological Frames and User Innovation. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (11 2019), 1–23. <https://doi.org/10.1145/3359146>
- [53] Mark Klein. 2012. Enabling large-scale deliberation using attention-mediation metrics. *Computer Supported Cooperative Work: CSCW: An International Journal* 21 (2012), 449–473. <https://doi.org/10.1007/s10606-012-9156-4>
- [54] Travis Kriplean, Jonathan Morgan, Deen Freelon, Alan Borning, and Lance Bennett. 2012. Supporting Reflective Public Thought with ConsiderIt. In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work - CSCW '12*. ACM Press, New York, New York, USA, 265–274. <https://doi.org/10.1145/2145204.2145249>
- [55] Travis Kriplean, Michael Toomim, Jonathan Morgan, Alan Borning, and Andrew Ko. 2012. Is this what you meant? Promoting listening on the Web with Reflect. In *Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems - CHI '12*. ACM Press, New York, New York, USA, 1559–1568. <https://doi.org/10.1145/2207676.2208621>
- [56] André Krouwel. 2003. Otto Kirchheimer and the catch-all party. *West European Politics* 26, 2 (2003), 23–40. <https://doi.org/10.1080/01402380512331341091>
- [57] Salla-Maaria Laaksonen and Matti Nelimarkka. 2018. Omat ja muiden aiheet: Laskennallinen analyysi vaalijulkisuuden teemoista ja aiheomistajuudesta. *Politiikka* 60, 2 (2018), 132–147.
- [58] Geoffrey C Layman, Thomas M Carsey, and Juliana Menasce Horowitz. 2006. Party polarization in American politics: Characteristics, causes, and consequences. *Annu. Rev. Polit. Sci.* 9 (2006), 83–110.
- [59] Huyen T Le, G R Boynton, Yelena Mejova, Zubair Shafiq, and Padmini Srinivasan. 2017. Revisiting The American Voter on Twitter. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*. ACM Press, New York, New York, USA, 4507–4519. <https://doi.org/10.1145/3025453.3025543>
- [60] Christopher Le Dantec. 2012. Participation and Publics. In *Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems - CHI '12*. ACM Press, New York, New York, USA, 1351–1360. <https://doi.org/10.1145/2207676.2208593>
- [61] Christopher A Le Dantec. 2016. *Designing publics*. MIT Press.
- [62] Christopher A. Le Dantec and W. Keith Edwards. 2010. Across boundaries of influence and accountability. *Proceedings of the 28th international conference on Human factors in computing systems - CHI '10* (2010), 113. <https://doi.org/10.1145/1753326.1753345>
- [63] Youn-Kyung Kyung Lim, Erik Stolterman, and Josh Tenenber. 2008. The Anatomy of Prototypes. *ACM Transactions on Computer-Human Interaction* 15, 2 (7 2008), 1–27. <https://doi.org/10.1145/1375761.1375762>
- [64] Willem Maas. 2001. Catch-all parties. In *Reader's Guide to the Social Sciences* (fitzroy de ed.), Jonathan Michie (Ed.). London, 167–168.
- [65] Edith Manosevitch, Nili Steinfeld, and Azi Lev-On. 2014. Promoting online deliberation quality: cognitive cues matter. *Information, Communication & Society* 17, 10 (11 2014), 1177–1195. <https://doi.org/10.1080/1369118X.2014.899610>
- [66] Samantha McDonald and Melissa Mazmanian. 2019. Information Materialities of Citizen Communication in the U.S. Congress. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (11 2019), 1–20. <https://doi.org/10.1145/3359149>
- [67] Solomon Messing and Sean J. Westwood. 2014. Selective Exposure in the Age of Social Media: Endorsements Trump Partisan Source Affiliation When Selecting News Online. *Communication Research* 41, 8 (2014), 1042–1063. <https://doi.org/10.1177/0093650212466406>

- [68] Rauli Mickelsson. 2015. *Suomen puolueet: Vapauden ajasta maailmantuskaan*. Vastapaino.
- [69] George Moyser. 2006. Elite Interviewing. In *The SAGE Dictionary of Social Research Methods*, Victor Jupp (Ed.). London, 85–86. <https://doi.org/10.4135/9780857020116>
- [70] Michael J. Muller. 2007. Participatory Design. In *Human-Computer Interaction*, Andrew Sears and Julie A. Jacko (Eds.). CRC Press. <https://doi.org/10.1201/9781420088892>
- [71] SA Munson, SY Lee, and Paul Resnick. 2013. Encouraging Reading of Diverse Political Viewpoints with a Browser Widget.. In *Proceedings of The International AAAI Conference on Web and Social Media*. 419–428. <http://www.aaai.org/ocs/index.php/ICWSM/ICWSM13/paper/viewFile/6119/6381>
- [72] Sean A. Munson and Paul Resnick. 2010. Presenting diverse political opinions. In *Proceedings of the 28th international conference on Human factors in computing systems - CHI '10*. ACM Press, New York, New York, USA, 1457–1466. <https://doi.org/10.1145/1753326.1753543>
- [73] Sean A Munson, Daniel Xiaodan Zhou, and Paul Resnick. 2009. Designing interfaces for presentation of opinion diversity. *Proceedings of the 27th international conference extended abstracts on Human factors in computing systems CHI EA 09* (2009), 3667–3672. <https://doi.org/10.1145/1520340.1520552>
- [74] Diana C. Mutz. 2008. Is Deliberative Democracy a Falsifiable Theory? *Annual Review of Political Science* 11, 1 (6 2008), 521–538. <https://doi.org/10.1146/annurev.polisci.11.081306.070308>
- [75] Laura Nader. 1972. Up the Anthropologist: Perspectives Gained from Studying Up. <https://doi.org/10.2307/j.ctvw04j6x.6>
- [76] Matti Nelimarkka. 2019. A Review of Research on Participation in Democratic Decision-Making Presented at SIGCHI Conferences. Toward an Improved Trading Zone Between Political Science and HCI. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (11 2019), 1–29. <https://doi.org/10.1145/3359241>
- [77] Matti Nelimarkka, Salla-Maaria Laaksonen, and Bryan Semaan. 2018. Social Media Is Polarized, Social Media Is Polarized. In *Proceedings of the 2018 on Designing Interactive Systems Conference 2018 - DIS '18*. ACM Press, New York, New York, USA, 957–970. <https://doi.org/10.1145/3196709.3196764>
- [78] Matti Nelimarkka, Jean Philippe Rancy, Jennifer Grygiel, and Bryan Semaan. 2019. (Re)Design to Mitigate Political Polarization. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (11 2019), 1–25. <https://doi.org/10.1145/3359243>
- [79] Matti Nelimarkka, Antti Salovaara, Bryan Semaan, and Giulio Jacucci. 2017. Theory-Driven Collocated CMC. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems - CHI '17*. ACM Press, New York, New York, USA, 4534–4547. <https://doi.org/10.1145/3025453.3025885>
- [80] Helen Nissenbaum. 2005. Values in Technical Design. In *Encyclopedia of Science, Technology, and Ethics*, Carl Mitcham (Ed.). MacMillan, New York, lxxi–lxx.
- [81] Oded Nov, Ofer Arazy, Claudia López, and Peter Brusilovsky. 2013. Exploring personality-targeted UI design in online social participation systems. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '13*. ACM Press, New York, New York, USA, 361. <https://doi.org/10.1145/2470654.2470707>
- [82] Wanda J Orlikowski and Debra C Gash. 1994. Technological frames: making sense of information technology in organizations. *ACM Transactions on Information Systems* 12, 2 (4 1994), 174–207. <https://doi.org/10.1145/196734.196745>
- [83] Emilia Palonen. 2017. Finland. *European Journal of Political Research Political Data Yearbook* (2017), 92–98. <https://doi.org/10.1111/2047-8852.12170>
- [84] Eli Pariser. 2011. *The filter bubble: What the Internet is hiding from you*. Penguin UK.
- [85] Souneil Park, Seungwoo Kang, Sangyoung Chung, and Junehwa Song. 2009. NewsCube. In *Proceedings of the 27th international conference on Human factors in computing systems - CHI 09*. ACM Press, New York, New York, USA, 443. <https://doi.org/10.1145/1518701.1518772>
- [86] James Pierce, Sarah Fox, Nick Merrill, Richmond Wong, and Carl DiSalvo. 2018. An Interface without A User. In *Proceedings of the 2018 on Designing Interactive Systems Conference 2018 - DIS '18*. ACM Press, New York, New York, USA, 1345–1358. <https://doi.org/10.1145/3196709.3196818>
- [87] David M. Ryfe. 2005. Does Deliberative Democracy work? *Annual Review of Political Science* 8, 1 (2005), 49–71. <https://doi.org/10.1146/annurev.polisci.8.032904.154633>
- [88] Joseph Seering, Tianmi Fang, Luca Damasco, Mianhong 'Cherie' Chen, Likang Sun, and Geoff Kaufman. 2019. Designing User Interface Elements to Improve the Quality and Civility of Discourse in Online Commenting Behaviors. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems - CHI '19*. ACM Press, New York, New York, USA, 1–14. <https://doi.org/10.1145/3290605.3300836>
- [89] Bryan Semaan, Heather Faucett, Scott Robertson, Misa Maruyama, and Sara Douglas. 2015. Navigating Imagined Audiences. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing - CSCW '15*. ACM Press, New York, New York, USA, 1158–1169. <https://doi.org/10.1145/2675133.2675187>
- [90] Bryan Semaan, Heather Faucett, Scott P Robertson, Misa Maruyama, and Sara Douglas. 2015. Designing Political Deliberation Environments to Support Interactions in the Public Sphere. In *Proceedings of the 33rd Annual ACM*

- Conference on Human Factors in Computing Systems - CHI '15*. ACM Press, New York, New York, USA, 3167–3176. <https://doi.org/10.1145/2702123.2702403>
- [91] Bryan C. Semaan, Scott P Robertson, Sara Douglas, and Misa Maruyama. 2014. Social media supporting political deliberation across multiple public spheres. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing - CSCW '14*. ACM Press, New York, New York, USA, 1409–1421. <https://doi.org/10.1145/2531602.2531605>
- [92] Suvi Silfverberg, Lassi A. Liikkanen, and Airi Lampinen. 2011. "I'll press play, but I won't listen". In *Proceedings of the ACM 2011 conference on Computer supported cooperative work - CSCW '11*. ACM Press, New York, New York, USA, 207–216. <https://doi.org/10.1145/1958824.1958855>
- [93] David Silverman. 2000. *Doing Qualitative Research. A practical handbook*. SAGE Publications, London.
- [94] Mel Stanfill. 2015. The Interface as Discourse: The Production of Norms through Web Design. *New Media & Society* 17, 7 (8 2015), 1059–1074. <https://doi.org/10.1177/1461444814520873>
- [95] Susan Leigh Star and Karen Ruhleder. 1996. Steps toward an ecology of infrastructure: Design and access for large information spaces. *Information systems research* 7, 1 (1996), 111–134.
- [96] Statistics Finland. 2006. Use of information and communications technology by individuals. <http://www.stat.fi/til/sutivi/2016/index.html>.
- [97] Erik Stolterman and Mikael Wiberg. 2010. Concept-Driven Interaction Design Research. *Human-Computer Interaction* 25, 2 (2010), 95–118. <https://doi.org/10.1080/07370020903586696>
- [98] Anselm Strauss and Juliet M. Corbin. 1990. *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications, Inc., London.
- [99] Abhay Sukumaran, Stephanie Vezich, Melanie McHugh, and Clifford Nass. 2011. Normative influences on thoughtful online participation. In *Proceedings of the 2011 annual conference on Human factors in computing systems*. ACM Press, New York, New York, USA, 3401–3410. <https://doi.org/10.1145/1978942.1979450>
- [100] Jan Sundberg. 2003. The Scandinavian Party Model at the Crossroads. In *Political Parties in Advanced Industrial Democracies*, Ian Holliday, David M. Farrell, and Paul Webb (Eds.). 181–216. <https://doi.org/10.1093/0199240566.003.0007>
- [101] Jan Sundberg. 2014. Finland. *European Journal of Political Research Political Data Yearbook* 53, 1 (2014), 117–123. <https://doi.org/10.1111/2047-8852.12046>
- [102] Jan Sundberg. 2015. Finland. *European Journal of Political Research Political Data Yearbook* 54, 1 (2015), 101–107. <https://doi.org/10.1111/2047-8852.12085>
- [103] Jeffrey W. Treem, Stephanie L. Dailey, Casey S. Pierce, and Paul M. Leonardi. 2015. Bringing technological frames to work: How previous experience with social media shapes the technology's meaning in an organization. *Journal of Communication* 65, 2 (2015), 396–422. <https://doi.org/10.1111/jcom.12149>
- [104] Rebekah Tromble. 2018. Thanks for (actually) responding! How citizen demand shapes politicians' interactive practices on Twitter. *New Media & Society* 20, 2 (2 2018), 676–697. <https://doi.org/10.1177/1461444816669158>
- [105] Emmanuel Tseklevs, Andy Darby, Anna Whicher, and Piotr Swiatek. 2017. Co-designing design fictions: A new approach for debating and priming future healthcare technologies and services. *Archives of Design Research* 30, 2 (may 2017), 5–21. <https://doi.org/10.15187/adr.2017.05.30.2.5>
- [106] Sepehr Vakil and Jennifer Higgs. 2019. It's about power. *Commun. ACM* 62, 3 (2 2019), 31–33. <https://doi.org/10.1145/3306617>
- [107] Kari Mikko Vesala and Teemu Rantanen. 2007. Laadullinen asennetutkimus: lähtökohtia, periaatteita, mahdollisuuksia. In *Argumentaatio ja tulkinta : laadullisen asennetutkimuksen lähestymistapa*, Kari Mikko Vesala and Teemu Rantanen (Eds.). Gaudeamus, Helsinki, 11–61.
- [108] Jussi Westinen. 2015. *Puoluevalinta suomessa 2000-luvulla*. 249–272.
- [109] Jussi Westinen. 2016. *Puoluevalinta Suomessa 2000-luvulla*. In *Poliittisen osallistumisen eriytyminen. Eduskuntavaalitutkimus.*, Kimmo Grönlund and Hanna Wass (Eds.). Ministry of Justice, Finland.
- [110] Jussi Westinen, Elna Kestilä-Kekkonen, and Aino Tiihonen. 2016. Äänestäjät arvo- ja asenneuottuvuuksilla. In *Poliittisen osallistumisen eriytyminen. Eduskuntavaalitutkimus.*, Kimmo Grönlund and Hanna Wass (Eds.). Ministry of Justice, Finland.
- [111] Langdon Winner. 1985. Do artifacts have politics? In *The social shaping of technology*, Donald MacKenzie and Judy Wajcman (Eds.). Open University Press, Buckingham, 26–38.
- [112] Richmond Y. Wong, Deirdre K. Mulligan, Ellen Van Wyk, James Pierce, and John Chuang. 2017. Eliciting Values Reflections by Engaging Privacy Futures Using Design Workbooks. *Proceedings of the ACM on Human-Computer Interaction* 1, CSCW (12 2017), 1–26. <https://doi.org/10.1145/3134746>
- [113] Thomas Wood and Ethan Porter. 2019. The Elusive Backfire Effect: Mass Attitudes' Steadfast Factual Adherence. *Political Behavior* 41, 1 (2019), 135–163. <https://doi.org/10.1007/s11109-018-9443-y>

- [114] Jung Hwan Yang, Hernando Rojas, Magdalena Wojcieszak, Toril Aalberg, Sharon Coen, James Curran, Kaori Hayashi, Shanto Iyengar, Paul K. Jones, Gianpietro Mazzoleni, Stylianos Papathanassopoulos, June Woong Rhee, David Rowe, Stuart Soroka, and Rodney Tiffen. 2016. Why Are “Others” So Polarized? Perceived Political Polarization and Media Use in 10 Countries. *Journal of Computer-Mediated Communication* 21, 5 (2016), 349–367. <https://doi.org/10.1111/jcc4.12166>
- [115] Amy X Zhang and Scott Counts. 2015. Modeling Ideology and Predicting Policy Change with Social Media. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems - CHI '15*. ACM Press, New York, New York, USA, 2603–2612. <https://doi.org/10.1145/2702123.2702193>
- [116] Yin Zhang and Louis Leung. 2015. A review of social networking service (SNS) research in communication journals from 2006 to 2011. *New Media & Society* 17, 7 (8 2015), 1007–1024. <https://doi.org/10.1177/1461444813520477>

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