

Echo- vs. Deliberative Chambers – Do Biased Online Discussions Threaten Direct Democracy?

1 Summary of the research plan

Many scholars claim that digitization poses a threat to opinion formation in particular and to direct democracy in general. The dominance of interactions with like-minded in so-called “echo-chambers” may radicalize opinions and undermine mutual understanding and compromise (see section 2.1). This is aggravated by the fact that cognitive biases are at work that cause people to develop overconfidence in their initial opinions (i.e. motivated reasoning). However, there might be room for a more optimistic view on digitization: Establishing so-called “deliberative chambers” might allow for a fruitful exchange of diverse arguments and positions and enrich the process of opinion formation. It is thus of crucial importance to understand the effects of discussions in online forums on the quality of citizens’ opinion formation.

By conducting experiments with the help of a simulated online forum, the proposed project examines how and to which extent discussions in online forums strengthen or weaken the quality of citizens’ opinion formation in direct democratic campaigns (see section 2.3). Our experiment will be based on a further development of an online tool dubbed “Smartopinion” (Wyss & Beste 2017). We will use this experimental platform to simulate asynchronous discussions. For our purpose, we randomly assign participants to a control group and four treatment groups: 1) a skewed forum where pro arguments dominate, 2) a skewed forum where con arguments dominate, 3) a forum where pro and con arguments are balanced, 4) and a free choice group, where participants decide themselves in which of the three forums they want to participate. This setup allows us to assess pivotal questions relevant to the motivated-reasoning and echo-chamber literature: a) Are people more likely to choose online forums populated by like-minded and do they exhibit confirmation and disconfirmation biases during discussions? b) Do skewed forums and biased information processing lead to a polarization of opinions and undermine the epistemic potential that could be released in balanced forums?

The proposed project addresses the following blind spots in current research on interpersonal (online) discussions (see section 2.2): 1) While traditional experiments on interpersonal discussion are partly compromised with regard to their internal validity, psychological experiments that are mainly concerned with internal validity involved the creation of artificial settings where individuals are treated in isolation from each other. Simulated online forums as proposed by this project try to consolidate these approaches by coming as close as possible to real-life online discussions without harming an experiment’s internal validity. 2) Studies on interpersonal discussion too often rely on an idealized notion of citizens that are free from cognitive biases. The proposed research fully integrates research on political psychology by acknowledging processes of motivated reasoning and by capturing a voters’ competence also in terms of the capacity to accommodate other positions (see also 2.4). 3) The only two online experiments conducted in Switzerland were both concerned with ballot proposals on migration, which is a highly salient and contested issue. Since interpersonal discussions and opinion formation are very context sensitive, it is imperative to conduct research in other settings as well.

From a more practical point of view, our research bears the potential of showing ways on how democratic quality in direct-democratic decision-making might be improved. Are “deliberative chambers” apt for fulfilling the epistemic function of a democracy, namely the search for decisions through a fruitful exchange of arguments by its citizens? Or do political discussions in online forums indeed deteriorate to simple “echo-chambers”?

2 Research plan

2.1 Relevance with regard to the issues addressed in the call

Digitization affects politics and, particularly, the formation of political opinions. While in the past, political opinions were formed through personal talks or by considering traditional newspapers, official information brochures or campaign information, the modern citizen now also uses online communication platforms in addition to - or sometimes instead of - conventional information channels. Up to now, the consequences of this development on citizens' political opinions are not well understood.

In the 1970s, the digitization of opinion formation processes was believed to be an instrument for direct and uncomplicated communication and a means to enlightened opinion formation, leading to a strengthening of political participation (Hindman 2009; Kneuer 2015; Rheingold 1993). The initial euphoria was soon replaced by disillusionment: the cost of using and processing inputs was not lowered by digitization (Cornfield & Arterton 1997). Hopes of an increase of the quality of democratic participation were raised again by the Internet 2.0, only to be disappointed even further. The reputation of the internet as medium for political discussions and opinion formation began to plummet: online platforms have a tendency to foster discussions only among ideologically like-minded, leading to the creation of so-called "echo-chambers". This, in turn, leads to polarization and radicalization of opinions instead of generating mutual understanding and compromise (Sunstein 2002). In addition, the internet's oligopolic and unregulated structure leaves the door open for third-party actors trying to influence communication and opinion formation processes by distributing fake news and using manipulative psychometric profiling in database driven campaigns (Allcott & Gentzkow 2017; Cadwalladr 2017). What was thought of as a "refreshing elixir" (in German: "Erfrischungselixier") (Kneuer 2015), seems to end up as a democratic threat: what if, in the end, the legitimacy of democratic outcomes declines due to a loss of confidence in the process of opinion formation, as Tambini (2018) demonstrates for the Brexit vote in the UK?

In Switzerland, empirical studies show that political processes are not yet fundamentally changed by digitization and social media (Bütikofer & Willi 2017; Lutz & Lebert 2017). For young Swiss citizens, however, the dominant position of leading traditional newspapers is crumbling. A decreasing level of trust in traditional media and journalists makes young people rely more strongly on online news sources such as social media and free and more heterogeneous online news services (DSJ 2017; fög 2016). Thus, the situation in Switzerland might be changing in the future: in fact, digitization in the context of public opinion formation could soon gain momentum (Bütikofer & Willi 2017).

Digitization poses two challenges for the opinion formation processes in Swiss direct democracy: In the first line, there is a challenge to understand how and to which extent discussions in online forums strengthen or weaken the quality of opinion formation in direct democracy. Second, there is a challenge to understand whether and how we could shape digitalization so that it does not negatively affect political opinion formation.

This second challenge depends closely on the assumption that digitization should not solely be viewed as a menace to democracy. A digital society also offers new possibilities for argumentative exchanges where individuals are not limited by time and place. The internet enables citizens to get access to a wide range of positions and arguments on an indefinite variety of issues. Establishing so-called "deliberative chambers", i.e. chambers that allow for a fruitful exchange of diverse arguments and positions, could thus enrich the process of direct democratic decision making (e.g. Helbing & Klauser 2017). Yet, from a scientific perspective, these claims might be premature as we have only weak insights in the performance and effectivity of such tools: Will the tools perform as predicted by theory? Will

citizens be willing and able to enter such “deliberative chambers” and to rationally update their initial opinions on an argument-based pathway?

2.2 State of research and need for research

According to participatory democrats, democracy should not be left to political experts and elected representatives who take more or less responsive decisions; democracy should be about public discourse (Barber 1984; Pateman 1979; Warren 1992). Several scholars have acknowledged the potential of anonymity of online discussions for stimulating desirable public discourse, arguing that the former may be more egalitarian (e.g., Moore 2016; Siegel et al. 1986; see also Strandberg & Grönlund 2014: 93) and that people might be more willing to air their true preferences, even if this results in disagreement when discussing online (Boyles 2010; Stromer-Galley 2003; see Price 2009: 43; but see also Witschge 2004: 115 f.). From an epistemic point of view, this is a desirable feature, since a crucial function of a democracy is to “produce preferences, opinions and decisions that are appropriately informed by facts and logic and are the outcome of substantive and meaningful consideration of relevant reasons” (Mansbridge et al. 2012).

However, we do know from political psychology that information processing is biased (e.g., Taber & Lodge 2006; Taylor & Fiske 1991; see Steenbergen 2010). Scholars often refer to “motivated reasoning”, a prominent psychological account of how people process political information (Kunda 1990; Mutz 2007; Slothuus & de Vreese 2010). A basic premise is that information processing is frequently aimed at directional goals, i.e. at a defense and maintenance of previously obtained values and identities, rather than at accuracy goals, i.e. at forming opinions that are evidence-based (Slothuus & de Vreese 2010). Motivated reasoning “occurs at every step of information processing, from setting goals, to gathering and evaluating evidence from the outside or from memory, to constructing inferences and judgments” (Mendelberg 2002: 168). Consequently, motivated reasoners have a broad set of innovative cognitive strategies at their disposal that all serve to find and interpret evidence to support their initial opinion (Kunda 1990). The strategies are, for instance, biased information search (Taber & Lodge 2006), biased evaluation of information (Bechtel et al. 2015; Jerit & Barabas 2012; Taber & Lodge 2006), biased assimilation (Corner et al. 2012), and identity-protective cognition (Kahan 2013). These considerations are a source of pessimism regarding public discourse, because motivated reasoning might hinder platform visitors to engage in deliberative activities. Instead, they only look for more information that corroborate their intuitive feelings. A likely consequence is that they leave the platform with more confidence in their initial opinions. Hence, scholars predict that cognitive biases related to motivated reasoning cause opinions to polarize (Sunstein 2002; Taber & Lodge 2006).

On the basis of the argumentative theory of reasoning, Mercier and Landemore (2012) offer a theoretical account why cognitive biases in public discussions do not necessarily produce biased opinions. They argue that cognitive biases in collective contexts are not flaws, but turn to “evolutionary” advantages. When individuals attempt to explain policy positions to their fellows and engage in mutual justification, they are incentivized to highlight the validity of their opinions based on universally intelligible reasons, while concurrently seeking flaws in dissenting arguments (Mercier & Landemore 2012; Mercier & Sperber 2011). If these activities are performed iteratively and mutually, cognitive biases will thus lead to an efficient division of cognitive labor where proponents of various conclusions put forward their own arguments, eventually leading to “epistemically sounder beliefs” (Mercier & Landemore 2012: 248). Public discussions thus enable individuals to become aware of their own blind spots and

reduce polarizing effects. Yet, while Mercier and Landmore have in mind face-to-face discussions, it remains unclear whether their argument applies also to discussions in online forums.

However, it is widely unknown how opinion formation in online forums works. We highlight three blind spots: the first blind spot in linking research on online discussions to opinion formation is tied to the fact that experimental control of interpersonal communication is limited. Even under highly favorable conditions, e.g. where individuals are randomly assigned to discussion groups and trained facilitators are present to maintain certain basic civility rules, there is considerable variation in individual participation and in the content of the discussion (Gerber 2015; Gerber et al. 2014). Internal validity of so-called deliberative experiments is further impaired by the fact that they are frequently based on a “package of interventions” (Mutz 2006: 59), such as the provision of information, the possibility to listen to experts and politicians. This makes it difficult to disentangle the effect of the discussion itself (Iyengar et al. 2003; Luskin et al. 2006; Strandberg & Grönlund 2012; but see Baccaro et al. 2016, Bächtiger et al. 2011, Wyss & Beste 2017). Thus, while classic deliberative experiments are partly compromised with regard to their internal validity, psychological experiments that were mainly concerned with internal validity involved the creation of artificial settings where individuals are treated in isolation from each other (Hansen 2004: 49f).

A second blind spot in the study of interpersonal discussions is that scholars too often rely upon an idealized notion of citizens that are free from any psychological constraints and changes their opinions after unbiased and careful reflection in the light of the better argument (Habermas 1984: 21). Recognizing that deliberating citizens will not end up at purely rational opinions, Barabas (2004) suggests the concept of “opinion updating”, according to which the formation of opinion always depends on prior information that is updated with new information. In this line of research, scholars have proposed to focus on voters’ argumentative repertoire (Cappella et al. 2002), attitude constraints (Sturgis et al. 2005) or cognitive complexity (Beste & Wyss 2014; Brundidge et al. 2014). All these concepts do not necessarily imply that opinions converge towards “rational consensus” based on the better argument. However, they still relate to the epistemic quality of opinions and address that informed voters base their decisions on epistemic considerations.

Last but not least, it is surprising how little research on this topic has been conducted in Switzerland. In the Swiss context, opinion formation plays a major role in daily politics. Swiss citizens might be better informed due to their extensive political participation rights (see Benz & Stutzer 2004; Bernhard & Bühlmann 2015). The only two online experiments conducted in Switzerland were both concerned with popular votes on migration, which is a highly salient and contested issue (Bächtiger et al. 2011; Pedrini 2014; Wyss & Beste 2017). There is a controversy whether issue saliency increases or decreases the willingness to engage in deliberation. While Fung (2003) argues that non-salient issues are more conducive to open-mindedness, psychologists claim that the willingness to diligently consider information and arguments is higher in cases where stakes are high (Petty et al. 1983). For Switzerland, Colombo (2016b) recently demonstrated empirically that voters’ argumentations in direct democracy are less elaborate when facing issue complexity and elite polarization but more elaborate when campaigns are intense. Thus, future research needs to consider different issues as well as different campaign contexts.

Our research project focuses on citizen discussions in online forums during actual campaigns for Swiss national votes while taking political psychological insights fully into account. In more concrete terms, we propose an experimental procedure to investigate both the negative consequences of online discussions and the potential of “deliberative chambers” that put special emphasis on balance of arguments in a forum. The core of our proposal is a novel tool that allows to manipulate and control for crucial aspects of online discussions, especially the information posted in the forum. Our tool will enable us to simulate real discussions in online forums which we analyze with

regard to (biased) information processing, the polarization (or depolarization) of opinions as well as the degree to which posterior opinions are epistemically sound.

2.3. Detailed research plan

We seek to answer the question of how and to which extent discussions in online forums strengthen or weaken the quality of citizens' opinion formation in direct democratic campaigns. Since our focus here is on the key issue of information processing, we analyze and evaluate the consequences of two kinds of well-known biases in the context of online discussions: 1) The aspect that users prefer to visit forums which are populated by people with congruent opinions (skewed forums) and 2) the aspect that users tend to discard postings incongruent to their own opinions (cognitive biases). Both aspects are major sources of skewness of online discussions.

Research targets and hypotheses

Our experimental study draws from three sets of hypotheses. A first set of hypotheses relates to the prevalence of confirmation and disconfirmation biases: we predict that people choose online forums congruent to their own opinions (H1a) and, within forums, they tend to look for information that confirms those priors (H1b). Drawing from Taber & Lodge (2006), we further predict that a person who receives arguments congruent or incongruent to his or her priors will either uncritically accept congruent evidence or oppose incongruent evidence (H1c). We also expect the aforementioned effects to be strongest when citizens have strong priors (H1d). In the study of Taber and Lodge (2006), participants with strong attitudes and a high political knowledge were more susceptible to these effects compared to participants with weak attitudes.

Our second set of hypotheses concerns the effect of online forums on the strength of posterior opinions: We draw from Taber and Lodge (2006) and predict that the more cognitively biased argument processing is (i.e. confirmation and disconfirmation bias), the more polarized participants' opinions will be (H2a). Similarly, we expect opinion polarization to take place for the participants attending skewed forums where congruent arguments dominate (H2b). However, it is relatively unclear what happens if citizens are exposed to a large number of incongruent arguments (i.e. participants in the skewed forum where incongruent arguments dominate). It might be that the perceived attack on one's beliefs leads to a boomerang effect (Byrne & Hart 2009; Hart & Nisbet 2012; Tormala & Petty 2002) creating an urge to defend one's position and thus enhances the polarization effect (H2c).

The third set of hypotheses addresses the level to which posterior opinions are epistemically sound, which we measure by the concepts of cognitive complexity, ambivalence, and argumentative repertoire. The three concepts target epistemic aspects of political opinion formation as they are concerned with the awareness of opponents' perspectives and the awareness of related trade-offs such as conflicting values and beliefs. Accordingly, in our first hypothesis of this set, we predict in a similar vein that the more skewed the forum (H3a) and the more biased argument processing is (H3b), the less epistemically sound are participants' posterior opinions. Hence, in the balanced group, we expect participants to yield highest scores on argument repertoire, cognitive complexity, and ambivalence. Again, we are pessimistic about the epistemic advancement in the forum dominated by incongruent arguments. We assume that in this forum (H3c), participants perceive the urge to defend their position and that their posterior opinions thus remain strongly anchored in their initial opinions (Byrne & Hart 2009; Hart & Nisbet 2012; Tormala & Petty 2002).

Experimental setup

We conduct experiments in a simulated online forum. By the term “simulated”, we let participants believe that they are part of a real online discussion. Hence, the forums are pre-equipped with a certain number of postings. To maximize authenticity, we draw the postings from real online discussions in the early phase of voting campaigns. Participants are allowed to read, rate and add postings. Yet, we carefully ensure that participants cannot influence other participants’ opinion formation. Thus, the newly entered postings and ratings are concealed from other participants. Experimentation with simulated forums have recently gained popularity (Buder 2015; Feinkohl et al. 2016). They have the advantage to come as close as possible to real-life online discussions, without harming an experiment’s internal validity (see blind spot 2 in chapter 2.2).

Our experiment will be based on a further development of an online tool dubbed “Smartopinion” (Wyss & Beste 2017). The tool was funded by the NCCR Democracy project and was developed in collaboration with Politools, Bern. Smartopinion is conceptualized as an experimental platform, allowing the deployment of different communication formats, both in synchronous and asynchronous ways. Most frequently, we experimented with an argumentative tree, partly modelled on the “Deliberatorium”, an online deliberative forum developed by Mark Klein (2012). The goal of this tool is to organize effective political discussion with a large amount of participants. In its first version, the tool featured an artificial moderator, a support chat, and the opportunity for running participant surveys before, during, and after the discussion process. Smartopinion has been successfully applied to a variety of topics, such as the initiative on enforcing the expulsion initiative (Durchsetzungsinitiative) in April 2015 (Wyss & Beste 2017), or in the context of citizens’ democratic preferences in Germany (Goldberg et al. 2018).

For the current project, we plan to adapt Smartopinion to our own needs. In concrete terms, we combine Smartopinion with a simulated online forum that is drawn from a currently popular social media platform. We make sure that the forum looks and performs as realistically as possible. This is crucial since we want to maximize the external validity of our experiments without requiring alternate technical skills of people participating in this forum.

Regarding recruitment, we strive for a representative sample of Swiss citizens, both German and French speakers. The recruiting process is outsourced to an external company (Qualtrics). At the beginning of the experiment, we randomly assign participants to a control group and four treatment groups: 1) a pro group, 2) a con group, 3) a balanced group, 4) and a free choice group. Participants of the pro and con groups have access to a skewed forum towards the pro or con position.¹ In the balanced forum, the pro and con side are equally represented. The members of the free choice group decide themselves in which of the three forums they want to participate: either the pro, the con or the balanced forum. The members of the control group cannot access any forum.

Key variables

Our main dependent variables are the polarization of opinions towards the pro and con side of the popular vote, the degree of cognitive complexity, as well as the change in ambivalence and argumentative repertoire. Following Taber and Lodge (2006), we will measure polarization using an additive scale on the different aspects of the popular vote. Additionally, we will include a question concerning the accordance with the proposal of the popular vote on a scale from -100 (completely disagree) to 100 (completely agree). Cognitive complexity captures “the degree to which an individual perceives, distinguishes and integrates topical dimensions” and thus also a “subject’s capacity to

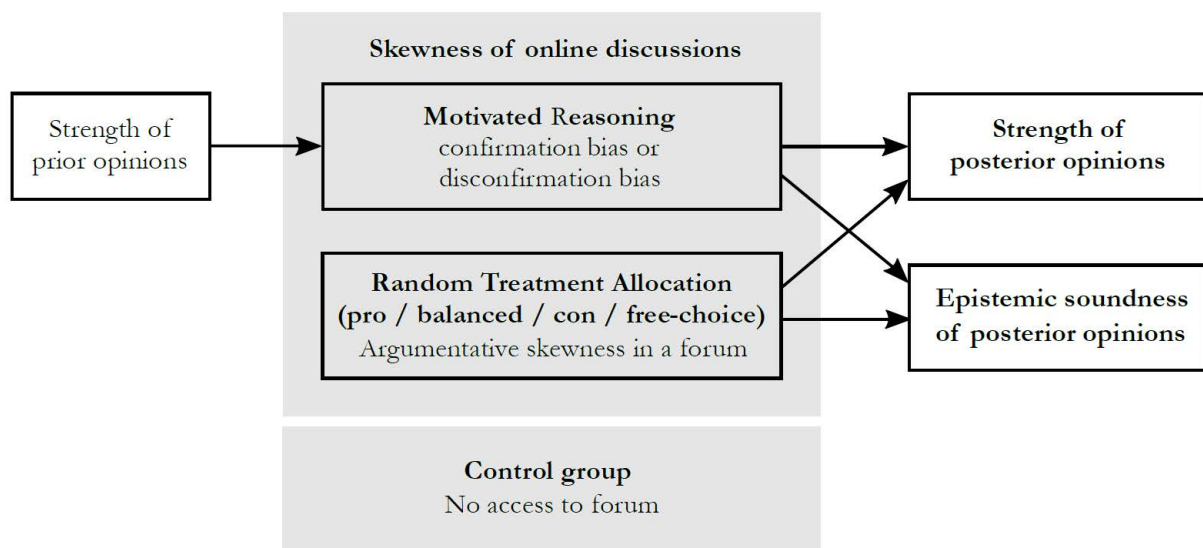
¹ In the skewed forums, the dominant position represents 80% of the postings. Shortly before the experiment, we perform pretests to ensure that the pro and contra coding of the postings is confirmed unambiguously by a set of independent people.

accommodate for conflicting goals” (Brundidge 2014; Wyss et al. 2015: 637). We will measure it by asking participants to write a little essay in which they explain and justify their personal stance on the voting subject (Tausczik & Pennebaker 2010). Ambivalence captures the amount of negative as well as positive sentiments an individual has with regard to an issue and is clearly separated from indifference where an individual has no or only weak feelings about an issue (Lavine et al. 2012; Rudolph 2005). We ask participants about their positive and negative assessments independently instead of asking them directly whether they have mixed feelings about the issue in question. Contrary to direct measures where respondents are only asked whether they have mixed feelings about an issue, an indirect measure captures the potential ambivalence, i.e. ambivalent feelings that respondents might not yet be aware of (Petty et al. 2006). The third concept to be applied is the “argumentative repertoire” (Cappella et al. 2002) and consists of an index formed out of the number of relevant reasons a person holds in favor and against a certain issue. Of course, the participants are asked about socio-demographic characteristics and political attitudes. Current campaign and opinion research serves as a template.

Research agenda

Figure 1 outlines our research agenda graphically.

Figure 1: Research outline



Research team and collaborations

The proposed project will mainly be conducted by Prof. Dr. Marc Bühlmann, Dr. Marlène Gerber and Dr. Anja Heidelberger, the board of directors of Année Politique Suisse (APS). Marc Bühlmann has experience in managing research projects and great expertise in the Swiss political system, foremost in direct democratic opinion formation (e.g. Bühlmann 2015a, b, 2017, 2018). Marlène Gerber is a proven researcher of deliberative processes and has experience in conducting experiments and surveys (e.g. Gerber 2015; Gerber & Mueller 2017; Gerber et al. 2016). The same applies to Anja Heidelberger who also has excellent knowledge on political participation and voting behavior (e.g. Heidelberger 2018; Heidelberger & Wirz 2015; Vatter & Heidelberger 2013, 2014).

The team is completed with two experts in the field of online deliberative experiments: Prof. Dr. André Bächtiger (University of Stuttgart) whose research focuses on the potential of citizen deliberation in direct democracy and the deliberative abilities of ordinary citizens (e.g. Bächtiger & Beste 2017; Bächtiger & Parkinson 2018; Bächtiger et al.

2018). His vast experience in the domain of empirical deliberation and deliberative experiments will help us in the achievement of our research goals. Dr. des. Dominik Wyss has developed a prototype of a discussion tool that will be adapted to serve as our main discussion platform. Additionally, he has published widely on the subject of online discussions in the context of experimental designs (e.g. Bächtiger & Wyss 2013; Goldberg et al. 2018; Lindell et al. 2016; Wyss & Beste 2017; Wyss et al. 2015). Finally, Guillaume Zumofen started in 2017 as a PhD student at the APS and is interested in individual opinion formation (e.g. Zumofen 2018; Zumofen et al. 2018). Since there is an overlap between our proposed project and his PhD project mainly in terms of the methodological approach, he will assist us in survey preparation and data handling. Moreover, as a native French speaker, he will translate the planned surveys to French.

Timetable

Table 1: Timetable

	2018				2019												2020	
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
1. Clarify open issues	■																	
2. Implementation of tool	■	■	■	■														
3. Surveys					■	■	■	■	■	■	■	■	■	■	■	■		
Pretest		■	■	■														
Development & test of survey concept	■	■	■	■														
Survey 1 (Februar 2019), wave 1					■													
Survey 1 (Februar 2019), wave 2						■												
Survey 2 (May 2019), wave 1							■											
Survey 2 (May 2019), wave 2								■	■	■	■	■	■	■	■	■		
4. Data analysis						■	■	■	■	■	■	■	■	■	■	■	■	■
Data cleansing						■	■	■	■	■	■	■	■	■	■	■	■	■
Data analysis						■	■	■	■	■	■	■	■	■	■	■	■	■
5. Final report																	■	■

Budget

We will conduct our survey based on a representative sample of Swiss citizens entitled to take part in popular votes in collaboration with Qualtrics. This company allows us to program our surveys independently; the research team has extant experience in programming online surveys. We have collaborated with Qualtrics before, and the company offered the recruitment at reasonable prices (about CHF 70'000 for a panel with 3'000 to 4'000 respondents).

Table 2: Budget

Budget positions	Budget in CHF
Research Funds	
Survey 1	70'000
Survey 2	70'000
Salaries	
Dominik Wyss <i>(18 months, 30%, Post-Doc)</i>	51'750
Guillaume Zumofen <i>(18 months, 20%, PhD student)</i>	27'600
Collaboration costs	
Collaboration with André Bächtiger (travel expenses)	3'000
Total: requested project costs	222'350

2.4 Innovation potential and subsequent research prospects

The planned project has both scientific and political relevance.

Scientifically, we attempt to get a more thorough view on opinion formation processes in the digitized sphere by combining research on democratic deliberation with political psychology. Our focus on direct-democratic votes in Switzerland allows us to examine the poorly researched topic of opinion formation in direct democratic settings. In this context, the new possibilities of digitized discussions play an important role. Even though the use of new internet technologies is growing rapidly (for current figures see Latzer et al. 2017) and social media seems to play an increasing role in voting campaigns (Rauchfleisch and Vogler 2018), there are hardly any empirical analyses on the impact of internet-based tools on opinion formation in Swiss voting campaigns (see section 2.2). Methodologically, we also innovate by examining opinion formation processes in simulated online discussions using experimental procedures (see section 2.3).

With regard to subsequent research prospects on political opinion formation, we see several avenues. For example, traditional research on public opinion has largely relied on measuring citizen competence by counting correct answers to a bunch of knowledge questions (e.g., Benz and Stutzer 2004; Delli Carpini & Keeter 1996). This approach may be limiting (Colombo 2016a: 54 ff.): by defining voter competence as epistemic soundness of opinions (see section 2.3), we therefore connect with research in political psychology on cognitive complexity (see Brundidge et al. 2014; see also Colombo 2016a). The concept of cognitive complexity to political science is rather new and research prospects in this field are numerous. Future research might thus want to identify factors that hamper and foster cognitive complexity, such as highly polarized or complex issues or the effect of argumentatively balanced online discussions in the context of “deliberative chambers”. With regard to the latter, the argumentative theory of reasoning stresses the importance of a “back and forth of arguments and counterarguments” for the creation of epistemically sound opinions (Mercier 2015: 7). This is something we cannot fully examine with our simulated online forums where interaction is limited. In order to pursue this promising line of research, one would need to closely examine reasoning processes in genuine online discussions. Related to this is the question whether and to what degree reasoning processes in asynchronous discussion forums, i.e. forums where people are not required to be present simultaneously, are comparable to those detected in synchronous and thus more interactive discussion forums. Up to now, research on this topic is sparse (Wyss and Beste 2017: 216).

From a more practical point of view, knowing how online forums are used and how they influence opinions is of great importance for the Swiss political system. To date, the standard story is that the internet bears the danger of distorting algorithms reinforcing our initial opinions, which in the end might hamper mutual understanding and desirable public discourse (see section 2.1). By the same token, digitization also offers new prospects for dialogue. Critics of the current situation have urged for the creation of an independent and credible online platform where people interact with others holding dissimilar views and/or where attention-mediation metrics aim at providing individuals with facts or arguments hitherto unknown to them (Helbing & Klauser 2017). Research on this subject is still scarce, but first results indicate that people participating in carefully designed online tools are willing and able to elaborate on their arguments and that their opinions do not polarize (Bächtiger et al. 2011; Wyss forthcoming). Besides, online-platforms might also foster the exchange between office holders and their electorate (Neblo et al. 2017). It is also because of the declining participation at the local level that the Swiss government has asked scientists to “find ways to improve the democratic quality of their referenda” (ibid. 915).

Evidence and experience collected in the project at hand opens up numerous ways to conduct follow-up research that could be undertaken most comprehensively within the framework of the planned National Research Programmes on “digital change in the economy and society”. For example, it remains to be explored whether citizens would in fact be interested and willing to make use of deliberative online-platforms. From research on participation at popular votes we know that the potential for participation is not yet exhausted (Bühlmann 2014: 77) and that political participation is selective (Dermont 2016, Sciarini et al. 2016, Serdült 2013) and biased (Heidelberger 2018, Kriesi 2005; Stadelmann-Steffen and Dermont 2016). Should we find that similar mechanisms are at work when it comes to participation in online discussion forums, this would imply that their epistemic potential cannot be fully realized. However, there is evidence that groups that are traditionally more marginalized in daily politics might regard such settings as “partial alternative to politics as usual” (Neblo et al. 2010: 566).

Ultimately, as a semi-direct democratic political system, Switzerland offers the unique opportunity to honor an inherent promise of democracy, namely the search for decisions through a fruitful exchange of arguments by its citizens. Whether and how this promise can in fact be realized, remains to be seen. Our findings can advance our knowledge about the role of (online) discussion and deliberation and thus advance the debate on direct democracy, which is increasingly seen as a tool to renew democracies worldwide.

3 Bibliography

- Allcott, Hunt and Matthew Gentzkow. 2017. "Social media and fake news in the 2016 election." *Journal of Economic Perspectives* 31(2): 211-36.
- Bächtiger, André, Marco Steenbergen, Thomas Gautschi, and Seraina Pedrini. 2011. "Deliberation in Swiss direct democracy: A field experiment on the expulsion initiative." *NCCR Newsletter* Nr. 8, February 2011.
- Baccaro, Lucio, André Bächtiger, and Marion Deville. 2016. "Small Differences That Matter." *British Journal of Political Science*, 46(3), 551–566.
- Bächtiger, André and Simon Beste. 2017. "Deliberative Citizens, (Non)Deliberative Politicians: A Rejoinder to False Distinctions & Outdated Assumptions in Deliberative & Democratic Thinking." *Daedalus* 146: 106-118.
- Bächtiger, André, John S. Dryzek, Jane J. Mansbridge, and Mark E. Warren (eds). 2018. *The Oxford Handbook of Deliberative Democracy*. Oxford: Oxford University Press.
- Bächtiger, André and John Parkinson. 2018. *Mapping and Measuring Deliberation. Micro and macro knowledge of deliberative quality, dynamics and contexts*. Oxford: Oxford University Press.
- Bächtiger, André and Dominik Wyss. 2013. "Empirische Deliberationsforschung – eine systematische Übersicht." *Zeitschrift Für Vergleichende Politikwissenschaft*, 7, 155–181.
- Barber, Benjamin. 1984. "Strong democracy: Participatory democracy for a new age." *Berkeley and Los Angeles*.
- Barabas, Jason. 2004. "How Deliberation Affects Policy Opinions." *The American Political Science Review*, 98(4): 687-701.
- Bechtel, Michael M., Jens Hainmueller, Dominik Hangartner, and Marc Helbling. 2015. "Reality bites: The limits of framing effects for salient and contested policy issues." *Political Science Research and Methods* 3(3): 683-695.
- Benz, Matthias and Alois Stutzer. 2004. "Are voters better informed when they have a larger say in politics? Evidence for the European Union and Switzerland." *Public Choice* 119(1/2): 31-59.
- Bernhard, Laurent and Marc Bühlmann. 2015. "Beeinflusst die direkte Demokratie das Wirksamkeitsgefühl von BürgerInnen?" In Ursula Münch, Uwe Kranenpohl and Eike-Christian Hornig (ed.). *Direkte Demokratie. Analysen im internationalen Vergleich*. Baden-Baden: Nomos; S. 83-97.
- Beste, Simon and Dominik Wyss. 2014. *Cognitive complexity as a proxy for high quality deliberation?* Paper presented at the ECPR General Conference, Glasgow, 3-6 September 2014.
- Boyles, Cindy. 2010. *Online vs. face-to-face deliberation on the global warming & stem cell issues*. Paper prepared for the Annual Meeting of the Western Political Science Association, San Francisco, California, April 1-3, 2010.
- Brundidge, Jennifer, Scott A. Reid, Sujin Choi, and Ashley Muddiman. (2014). "The 'Deliberative Digital Divide': Opinion Leadership and Integrative Complexity in the U.S. Political Blogosphere." *Political Psychology*, 35(6): 741-755.
- Buder, Jürgen, Christina Schwind, Anja Rudat, and Daniel Bodemer. 2015. "Selective reading of large online forum discussions: The impact of rating visualizations on navigation and learning." *Computers in Human Behavior*, 44: 191-201.
- Bühlmann, Marc 2014. "Zwischen Anspruch und Wirklichkeit – Beteiligungskultur in der Schweiz." In: Stock, Marion (ed.). *Teilhaben und Mitgestalten. Beteiligungskulturen in Deutschland, Österreich und der Schweiz*. Bonn: Stiftung Mitarbeit; S. 61-81.
- Bühlmann, Marc. 2015a. "Reformbedarf in der direkten Demokratie? Elitistische Einsprüche, partizipatorische Ansprüche und prozedurale Gelassenheit." *Leges* 2015(3): 571-583.
- Bühlmann, Marc. 2015b. "Semidirekte Demokratie als Spiel. Zum Verhältnis zwischen Bürgerschaft und Parlament. Parlament." *Mitteilungsblatt der Schweizerischen Gesellschaft für Parlamentsfragen* 18(1): 4-15.
- Bühlmann, Marc. 2017. *Ausgewählte Beiträge zur Schweizer Politik: Institutionen und Volksrechte, 2015*. Bern: Année Politique Suisse, Institut für Politikwissenschaft, Universität Bern. www.anneepolitique.swiss.

- Bühlmann, Marc. 2018. "‘Leuchtturm der Hoffnung’ oder ‘Erzeugerin irrationaler Ängste’. Taugt die direkte Demokratie der Schweiz als Vorbild?" In Andreas H. Apelt and Dirk Reimers (ed.). *Repräsentative versus direkte Demokratie. Repräsentation in der Krise?* Halle: Mitteldeutscher Verlag; S. 100-121.
- Bütikofer, Sarah and Thomas Willi. 2017. "Mit dem richtigen Hashtag die Abstimmung gewinnen? Social Media im Schweizer Abstimmungskampf", in: Fichter, Adrienne (ed.): *Smartphone-Demokratie*. Zürich: NZZ Libro.
- Byrne, Sahara and Philip Solomon Hart. 2009. "The Boomerang Effect A Synthesis of Findings and a Preliminary Theoretical Framework." *Annals of the International Communication Association* 33(1): 3-37.
- Cadwalladr, Carole. 2017. "The Great British Brexit Robbery: How Our Democracy Was Hijacked." Observer, May 7, 2017. <https://www.theguardian.com/technology/2017/may/07/the-great-british-brexit-robbery-hijacked-democracy>.
- Cappella, Joseph N., Vincent Price, and Lilach Nir. 2002. "Argument repertoire as a reliable and valid measure of opinion quality: Electronic dialogue during campaign 2000." *Political Communication* 19(1): 73-93.
- Colombo, Céline. 2016a. *Partisan, not ignorant: Citizens' use of arguments and justifications in direct democracy*. Dissertation thesis. European University Institute, Florence.
- Colombo, Céline. 2016b. "Justifications and citizen competence in direct democracy: A multilevel analysis." *British Journal of Political Science*. First View.
- Corner, Adam, Lorraine Whitmarsh, and Dimitrios Xenias. 2012. "Uncertainty, scepticism and attitudes towards climate change: biased assimilation and attitude polarisation." *Climatic Change*, 114: 463-478.
- Cornfield, Michael and F. Christopher Arterton. 1997. "NETIZENS AHEAD?" *The Internet As Paradigm* 8: 85.
- Delli Carpini, Michael X. and Scott Keeter. 1996. *What Americans know about politics and why it matters*. London: Yale University Press.
- Dermont, Clau. 2016. "Taking Turns at the Ballot Box: Selective Participation as a New Perspective on Low Turnout." *Swiss Political Science Review* 22(2): 213-231.
- DSJ, Dachverbands Schweizer Jugendparlamente. 2017. "easyvote-Politikmonitor 2017 - Weniger Informationslust und niedriges Vertrauen" https://www.easyvote.ch/fileadmin/files/Politische_Partizipation/Studien/Politikmonitor_2018/easyvotePolitikmonitor17_WIK_D.pdf
- Feinkohl, Insa, Danny Flemming, Ulrike Cress, and Joachim Kimmerle. 2016. "The Impact of Personality Factors and Preceding User Comments on the Processing of Research Findings on Deep Brain Stimulation: A Randomized Controlled Experiment in a Simulated Online Forum." *Journal of Medical Internet Research* 18(3): 59.
- Fung, Archon. 2003. "Survey Article: Recipes for Public Spheres: Eight Institutional Design Choices and Their Consequences." *Journal of Political Philosophy*, 11(3), 338–367.
- Fög, Forschungsbereich Öffentlichkeit und Gesellschaft der Universität Zürich (ed.). 2016. "Jahrbuch 2016 Qualität der Medien". Basel: Schwabe.
- Gerber, Marlène. 2015. "Equal partners in dialogue? Participation equality in a transnational deliberative poll (Europolis)." *Political Studies* 63(S1): 110-130.
- Gerber, Marlène, André Bächtiger, Susumu Shikano, Simon Reber, and Samuel Rohr. 2016. "Deliberative Abilities and Deliberative Influence in a Transnational Deliberative Poll (EuroPolis)." *British Journal of Political Science*. Online First. Published online: 15th September 2016. DOI: <https://doi.org/10.1017/S0007123416000144>.
- Gerber, Marlène, André Bächtiger, Irena Fiket, Marco Steenbergen, and Jürg Steiner. 2014. "Deliberative and non-deliberative persuasion: Mechanisms of opinion formation in EuroPolis." *European Union Politics* 15(3): 410-429.
- Gerber, Marlène and Sean Mueller. 2017. "When the People Speak – and Decide: Deliberation and Direct Democracy in the Citizen Assembly of Glarus, Switzerland." *Policy & Politics*. Online First. Published online: 23rd June 2017. DOI: <https://doi.org/10.1332/030557317X14976099453327>.

- Goldberg Saskia, André Bächtiger, and Dominik Wyss. 2018. "Deliberating or Thinking (Twice) about Democratic Preferences: What German Citizens Want from Democracy", Manuscript submitted for publication.
- Habermas, Jürgen. 1984. *The Theory of Communicative Action, Volume 1: Reason and the Rationalization of Society*. Boston: Beacon Press.
- Hansen, Kasper Møller. 2004. *Deliberative democracy and opinion formation*. Odense: University Press of Southern Denmark.
- Hart, P. Sol, and Erik C. Nisbet. 2012. "Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies." *Communication Research* 39(6): 701-723.
- Heidelberger, Anja. 2018. *Die Abstimmungsbeteiligung in der Schweiz: Psychologische und soziale Einflüsse auf die Abstimmungsneigung*. Nomos.
- Heidelberger, Anja and Rolf Wirz. 2015. "Der extrovertierte Musterbürger: Persönlichkeit und Wahlteilnahme". In: Markus Freitag and Adrian Vatter (ed.) *Wahlen und Wählerschaft in der Schweiz*, Politik und Gesellschaft in der Schweiz: Vol. 3 (S. 121-143). Zürich: NZZ Libro.
- Helbing, Dirk and Stefan Klauer. 2017. "Warum wir ein Demokratie-Upgrade für das digitale Zeitalter benötigen", in: Fichter, Adrienne (ed.): *Smartphone-Demokratie*. Zürich: NZZ Libro, pp. 215-223.
- Hindman, Matthew. 2009. *The Myth of Digital Democracy*. Oxford: Princeton University Press.
- Iyengar, Shanto, Robert C. Luskin, and James S. Fishkin. 2003. "Facilitating informed public opinion: evidence from face-to-face and online deliberative polls." *Annual Meeting of the American Political Science Association*.
- Jerit, Jennifer and Jason Barabas. 2012. "Partisan perceptual bias and the information environment." *The Journal of Politics* 74(3): 672-684.
- Kahan, Dan M. 2013. "Ideology, motivated reasoning, and cognitive reflection." *Judgment and Decision Making*, 8(4): 407-424.
- Klein, Mark. 2012. "Enabling large-scale mediation using attention-mediation metrics." *Computer Supported Cooperative Work* 21: 449-473.
- Kneuer, Marianne. 2015. "Mehr demokratische Qualität durch das Internet." *Journal of Self-Regulation and Regulation* (1): 47-63.
- Kriesi, Hanspeter. 2005. *Direct democratic choice: the Swiss experience*. Lanham: Lexington Books.
- Kunda, Ziva. 1990. "The case for motivated reasoning." *Psychological Bulletin* 108(3): 480.
- Latzer, Michael, Moritz Büchi, Noemi Festic, and Natascha Just. 2017. "Internetanwendungen und deren Nutzung in der Schweiz 2017". *World Internet Project – Switzerland 2017*. Zürich: IPMZ.
- Lavine, Howard G., Christopher D. Johnston, and Marco Steenbergen. 2012. *The ambivalent partisan: How critical loyalty promotes democracy*. New York: Oxford University Press.
- Lindell, Marina., André Bächtiger., Kimmo Grönlund., Kaisa Herne., Maija Setälä, and Dominik Wyss. 2016. "What drives the polarisation and moderation of opinions? Evidence from a Finnish citizen deliberation experiment on immigration." *European Journal of Political Research*.
- Lutz, Georg and Florence Lebert. 2017. *VOTO-Studie zur eidgenössischen Volksabstimmung vom 27. November 2016*. FORS, ZDA, LINK: Lausanne/Aarau/Luzern.
- Luskin, Robert C., James S. Fishkin, and Shanto Iyengar. 2006. "Considered opinions on U.S. foreign policy: Evidence from online and face-to-face deliberative polling." Working paper. *The Center for Deliberative Democracy*. <http://cdd.stanford.edu/mm/2006/foreign-policy.pdf>
- Mansbridge, Jane, James Bohman, Simone Chambers, Thomas Christiano, Archon Fung, John Parkinson, Dennis F. Thompson, and Mark E. Warren. 2012. "A systemic approach to deliberative democracy." *Deliberative systems: Deliberative democracy at the large scale*. 1-26.
- Mendelberg, Tali. 2002. "The deliberative citizen: Theory and evidence." *Political Decision Making, Deliberation and Participation* 6(1): 151-193.

- Mercier, Hugo. 2015. "The argumentative theory: Predictions and empirical evidence." *Trends in Cognitive Sciences* 20(9): 689-700.
- Mercier, Hugo and Hélène Landemore. 2012. "Reasoning is for arguing: Understanding the successes and failures of deliberation." *Political Psychology* 33(2): 243-258.
- Mercier, Hugo and Dan Sperber. 2011. "Why do humans reason? Arguments for an argumentative theory." *Behavioral and brain sciences* 34(2): 57-74.
- Moore, Alfred 2016. "Anonymity, Pseudonymity and Deliberation: Why Not Everything Should be Connected." *Journal of Political Philosophy*, 0(May): 1-4.
- Mutz, Diana C. 2006. *Hearing the other side: Deliberative versus participatory democracy*. Cambridge University Press.
- Mutz, Diana C. 2007. "Effects of "in-your-face" television discourse on perceptions of a legitimate opposition." *American Political Science Review* 101(4): 621-635.
- Neblo, Michael A., Kevin M. Esterling, Ryan P. Kennedy, David M.J. Lazer, and Anand E. Sokhey. 2010. "Who wants to deliberate - and why?" *American Political Science Review* 104(3): 566-583.
- Neblo, Michael A., William Minozzi, Kevin M. Esterling, Jon Green, Jonathon Kingzette, and David M.J. Lazer. 2017. "The need for a translational science of democracy." *Science* 355(6328): 914-915.
- Pateman, Carole. 1979. "The Problem of Political Obligation: A Critical Analysis of Liberal Theory." *Philosophical Review* 90(3): 475-479.
- Pedrini, Seraina. 2014. "Deliberative capacity in the political and civic sphere." *Swiss Political Science Review* 20(2): 263-286.
- Petty, Richard E., John T. Cacioppo, and David Schumann. 1983. "Central and peripheral routes to advertising effectiveness: The moderating role of involvement." *Journal of Consumer Research* 10(2): 135-146.
- Petty, Richard E., Zakary L. Tormala, Pablo Briñol, and W. Blair Jarvis. 2006. "Implicit ambivalence from attitude change: An exploration of the PAST model." *Journal of Personality and Social Psychology*, 90(1): 21-41.
- Price, Vincent. 2009. Citizens deliberating online: "Theory and some evidence". In: Davies, Todd and Seeta P. Gangadharan (eds.), *Online deliberation: Design, research and practice*. Stanford: SCSLI Publications, pp. 37-58.
- Rauchfleisch, Adrian and Daniel Vogler. 2018. *#NoBillag auf Twitter: Grabenkämpfe zwischen Gegnern und Befürwortern*. f.ög. Universität Zürich.
- Rheingold, Howard. 1993. *The Virtual Community: Homesteading at the Electronic Frontier*. MIT Press: New York.
- Rudolph, Thomas J. 2005. "Group Attachment and the Reduction of Value-Driven Ambivalence." *Political Psychology* 26(6): 905-928.
- Sciarini, Pascal, Fabio Cappelletti, Andreas C. Goldberg, and Simon Lanz (2016). "The Underexplored Species: Selective Participation in Direct Democratic Votes." *Swiss Political Science Review* 22(1): 75-94.
- Serdült, Uwe (2013). "Partizipation als Norm und Artefakt in der schweizerischen Abstimmungsdemokratie – Entmystifizierung der durchschnittlichen Stimmbeteiligung anhand von Stimmregisterdaten aus der Stadt St. Gallen." In Andrea Good and Bettina Platipodis (ed.), *Direkte Demokratie: Herausforderungen zwischen Politik und Recht*. Bern: Stämpfli: 41–50.
- Siegel, Jane, Vitaly Dubrovsky, Sara Kiesler, and Timothy W. McGuire. 1986. "Group processes in computer-mediated communication." *Organizational behavior and human decision processes*, 37(2), 157-187.
- Slothuus, Rune and Claes H. De Vreese. 2010. "Political parties, motivated reasoning, and issue framing effects." *The Journal of Politics* 72(3): 630-645.
- Stadelmann-Steffen, Isabelle and Clau Dermont (2016). "How exclusive is assembly democracy? Citizens' assembly and ballot participation compared." *Swiss Political Science Review* 22(1): 95-122.
- Steenbergen, Marco R. 2010. "The new political psychology of voting." *Information–Wahrnehmung–Emotion*. VS Verlag für Sozialwissenschaften. 13-31.
- Strandberg, Kim and Kimmo Grönlund. 2012. "Online deliberation and its outcome—evidence from the virtual polity experiment." *Journal of Information Technology & Politics* 9(2): 167-184.

- Strandberg, Kim and Kimmo Grönlund. 2014. "Online deliberation: Theory and practice in virtual mini-publics." *Deliberative mini-publics: Involving citizens in the democratic processes*. 93-114.
- Stromer-Galley, Jennifer. 2003. "Diversity of political conversation on the Internet: Users' perspectives." *Journal of Computer-Mediated Communication* 8(3):
- Stromer-Galley, Jennifer and Peter Muhlberger. 2009. "Agreement and disagreement in group deliberation: Effects on deliberation satisfaction, future engagement, and decision legitimacy." *Political communication* 26(2): 173-192.
- Sturgis, Patrick, Caroline Roberts, and Nick Allum. 2005. "A different take on the deliberative poll: Information, deliberation, and attitude constraint." *Public Opinion Quarterly* 69(1): 30-65.
- Sunstein, Cass. 2002. "The Law of Group Polarization". *Journal of Political Philosophy* 10(2).
- Taber, Charles S. and Milton Lodge. 2006. "Motivated skepticism in the evaluation of political beliefs." *American Journal of Political Science* 50(3): 755-769.
- Tambini Damian. 2018. "Social Media Power and Election Legitimacy". in: *Digital Dominance - The power of Google, Amazon, Facebook, and Apple*. Oxford University Press. 265-293.
- Tausczik, Yla R. and James. W. Pennebaker. 2010. "The Psychological Meaning of Words: LIWC and Computerized Text Analysis Methods". *Journal of Language and Social Psychology* 1(29). 24-54.
- Taylor, Shelley E. and Susan T. Fiske. 1991. *Social cognition* (2nd ed.). New York: McGraw-Hill.
- Tormala, Zakary L. and Richard E. Petty. 2002. "What doesn't kill me makes me stronger: The effects of resisting persuasion on attitude certainty." *Journal of Personality and Social Psychology* 83(6): 1298.
- Vatter, Adrian and Anja Heidelberger. 2013. "Volksentscheide nach dem NIMBY-Prinzip? Eine Analyse des Abstimmungsverhaltens zu Stuttgart 21." *Politische Vierteljahresschrift*, 54(2): 317-335.
- Vatter, Adrian and Anja Heidelberger. 2014. "Volksentscheide nach dem Sankt-Florians-Prinzip? Das Abstimmungsverhalten zu Stuttgart 21 und grossen Infrastrukturprojekten in der Schweiz im Vergleich." In: Lars P. Feld, Peter M. Huber, Otmar Jung, Hans-Joachim Lauth, and Fabian Wittreck (ed.): *Jahrbuch für direkte Demokratie 2013*. Nomos: 9-54.
- Warren, Mark. 1992. "Democratic Theory and Self-Transformation." *American Political Science Review* 86(1): 8-23.
- Witschge, Tamara. 2004. "Online deliberation: Possibilities of the Internet for deliberative democracy." In: Shane, Peter M. (ed.), *Democracy online*. New York: Routledge, pp. 109-122.
- Wyss, Dominik. (forthcoming). "The Role of cognitive biases in asynchronous forums." In: *Feedback from the Other Side: A Dialogical Perspective on the Evaluation of Online Discussions* (Unpublished doctoral dissertation).
- Wyss, Dominik and Simon Beste. 2017. "Artificial facilitation: Promoting collective reasoning within asynchronous discussions". *Journal of Information Technology & Politics*, 14(3), 214-231.
- Wyss, Dominik, André Bächtiger, and Simon Beste. 2015. "A decline in the quality of debate? The evolution of cognitive complexity in Swiss parliamentary debates on immigration (1968-2014)." *Swiss Political Science Review* 21(4): 636-653.
- Zumofen, Guillaume. 2018. "Media effects on voting behaviour: new insights into a common tale." *Paper presented at the 76th Annual MPSA Conference Chicago 2018*.
- Zumofen, Guillaume, Isabelle Stadelmann-Steffen, Marc Bühlmann, and Clau Dermont. 2018. "Information gathering strategy in a changing media environment: What drives selective exposure during political campaigns?" *Paper presented at the 76th Annual MPSA Conference Chicago 2018*.