Voting Advice Applications: Self-Persuasion Online

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1. Introduction

With the advent of the digital age that marks the beginning of the 21st century, disruptive, Internet-based technologies have started to spread across the globe. Be it in the field of information gathering, housing, transportation, communication, social connecting   – the world the way a modern smart-phone holder sees it has drastically changed. One of characteristics common to these disruptive technologies is their ability to better match the individual preferences of users with an increasingly specialized and refined offer. Users have personalized profiles and act upon tailor-made proposals for maximizing their personal preferences.

In politics, the disruptiveness is – intriguingly – less prominent. For sure, campaigns use the power of the Internet to reach out to as many followers and potential voters as possible. For sure, parties, candidates and representatives embrace social networks. For sure, access to a strongly developed amount of political information has become much easier, rendering democratic processes more transparent and potentially accountable. However, by and large, the impact of technology on politics does not seem to follow the disruptive pattern of other areas of society. Similarly, the debate about technology's effect on individuals' propensity to engage with politics remains controversial (Hindman 2009; Bimber 1999; Norris 2001; Chadwick 2006; Farrell 2012; Grofman et al. 2014). Public opinion formation, it is argued by many scholars, still follows the general, traditional patterns described in the relevant literature.

In this contribution we refrain from taking sides. After all, what "a large" or "a limited" impact means depends first and foremost on the definition given by the researcher. And it is context dependent. For instance, if a certain technology leads one percent of all voters to change their behavior, this may have no impact at all on the outcome of an election in which the winning party obtains 75 percent of all votes. However, in a highly competitive referendum campaign, where the electorate is split in equal halves, such a shift may become decisive. Thus, we are not so much interested in determining to what extent technology impacts on political outcomes. Rather, we focus on the above-identified characteristic, shared among disruptive technologies, i.e. a tailor-made, personalized offer that matches users' preferences. In politics, such a technology does so far not exist. One cannot (yet?) chose ones' best-fitting candidate and "buy" her services to satisfy ones' preferences. The Uber, Lyft or AirBnB of democracy has not yet seen the light of day.

However, there are most interesting technological developments that go into the direction of a personalization of political information available to voters. There are two forms of personalization of such information: a marketing-oriented one and a civic education one. The marketing-oriented one is employed by

campaigns in an ever more refined way. Most visibly, personalized profiles of voters have found their ways into enormous databases run by the tech branches of campaigns in the US (Hersh 2015), leading to digitally based "ground wars" during and between elections (Nielsen 2012). Generally, the communication by campaigns and their ever-refined targeting abilities have drastically changed through the availability of modern communication technology (Hillygus & Shields 2008). However innovative the contacting abilities of campaigns, the mechanisms behind this personalized form of political advertising follow the traditional logic of persuasion. The second form of personalized information provision targets civic education. Typically here, the logic is inversed, with citizens actively seeking what campaign may match their political preferences best. It is this form of personalized information provision that is at the center of this contribution as exposure to the latter can lead to political self-persuasion, a concept that has so far hardly been explored.

In the following section we will present the most compelling vehicles of such political self-persuasion-inducing civic education platforms that become ever more prominent in the run-up to elections, so called Voting Advice Applications (VAAs). VAAs are Internet-based tools that aggregate political information on candidates and parties, allowing their users to match individual, detailed policy preferences with the electoral offer. The system typically produces rankings of overlap between a user's preferences and the candidates or parties running in the elections. In the most recent past such VAAs have proliferated throughout modern, liberal democracies, most notably in Western Europe. In multi-party systems, VAAs are particularly popular. In Germany, the Netherlands or in Switzerland, for instance, between a quarter and half of the electorate typically uses a VAA prior to the respective national elections. With the advent of these tools, research has started to develop on their potential effects on voters. We argue that one of the most compelling effects of VAAs lies at the intersection of public opinion formation, social psychology and political communication: political self-persuasion. VAAs help their users to acquire personalized, tailor-made information. They help users to learn more about their very own politics and about the electoral offer relative to their views. Through novel, experimental research, it could be shown that this process may lead to what we call political self-persuasion. In the third section we will elaborate on the particular mechanism leading to political self-persuasion. In the fourth section we present an overview of empirical findings that support our theoretical argument. The fifth section concludes.


2. VAAs in electoral campaigns

One of the defining characteristics of online political communication lies with its interactive capabilities and the possibility, for Internet users, of gathering "more detailed information [that] can be customized to a greater extent" (Prior, 2005: 579). The provision of *tailor-made* information is indeed a common phenomenon in today's online landscape. Social media relentlessly (re)shape the information environment by allowing users to manage information in a way that fits their needs (Lau and Redlawsk, 2006). Facebook, for instance, provides its users

solely with information about status and activities of persons and pages they decided to follow. In this way, users receive information – including political information – in the light of their own preferences.

Not only social networks provide people with personalized (political) information. In the last decade, VAAs have proliferated across European democracies and beyond. VAAs help users casting a vote by comparing their policy preferences on major issues with the programmatic stances of political parties on such issues (for an overview, see: Garzia and Marschall, 2014). To establish the position of political parties on the issues, VAA providers rely on either expert assessments, party self-positioning or an iterative combination of the two (see also Trechsel & Mair 2011, Garzia et al., 2015). VAA users respond to the very same list of issue statements marking their degree of (dis)agreement with each of the statements. After comparing the user's profile with that of each party/candidate through a matching algorithm (for a review, see: Mendez, 2014), the VAA produces its "advice", usually in the form of a rank-ordered list, at the top of which stands the party/candidate closest to the user's policy preferences. Other variants include more complex graphic illustrating proximity or distance on a two- or three-dimensional policy space as well as in a multi-dimensional "spidergram" (see *Figure 1* below).

Figure 1: *Different forms of VAA output*
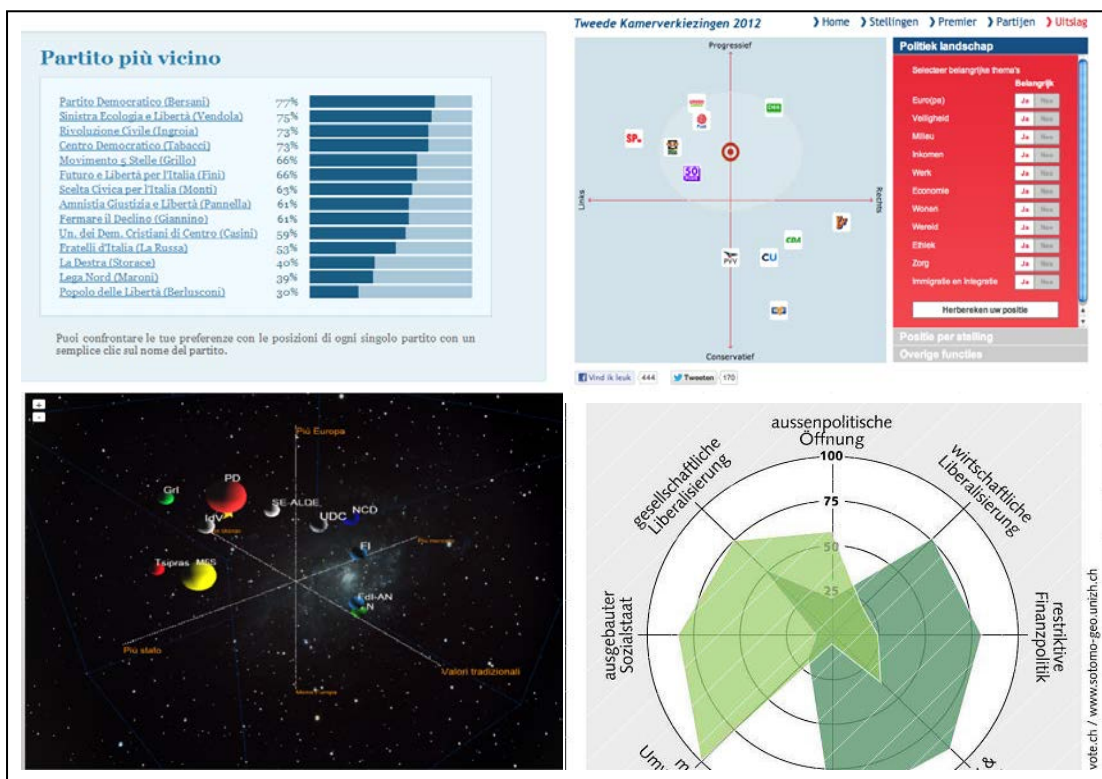
VAA generated output can be considered a form of political communication. At the same time, it is considerably different from most of the campaign messages that citizens traditionally receive. Like traditional media, VAAs relay information about parties' positions to voters. Unlike other sources, however, they provide *customized, tailor-made* political information. VAAs offer an explicit ranking of viable options with an implication that this ranking is tailored according to the user's political opinion. In other words, VAAs reveal to the user the structure of the political competition in light of her own preferences. We will come back to this crucial difference with other sources of political information further below.

The ability of VAAs to reduce the costs of information at election time is one of the keys to understand their growing success among voters (Alvarez et al., 2014). Nowadays, the existence of at least one VAA has been witnessed in virtually every Western democracy. In countries like Belgium, Germany, Switzerland and the Netherlands, the proportion of eligible voters resorting to VAAs at election time ranges between ten and forty per cent (Marschall, 2014). To mention just a few examples, the pioneering Dutch VAA *Stemwijzer* was used almost five million times during the parliamentary election of 2012. The following year, the German VAA *Wahl-O-Mat*, developed for the federal election of 2013, peaked with over 12 million users. In several countries, VAAs are mentioned as the primary source of political information during the campaign by a relative majority of voters, outnumbering traditional media such as newspapers and television (Ruusuvirta, 2010).

In terms of socio-demographic profile, VAA users substantially resemble the general population of political information seekers on the web: male, highly educated and strongly interested in politics. Yet, from an attitudinal point of view, VAA users can be classified according to a recently developed three-fold typology (van de Pol *et al.*, 2014) involving in order of sub-population size:

- *checkers*: the largest group of users, with high political interest, relatively strong certainty in their vote choice, and thus least interested in the voting advice provided by the application. They mostly use the VAA to merely check if the voting advice provided by the application matches with their pre-existing, relatively fixed voting intention;
- *seekers*: users with comparatively lower political interest and clarity of party preferences. Their patterns of VAA usage point to a quest for guidance into the few alternatives being already considered;
- *doubters*: the smallest part of a VAA sample, are defined by their strong lack of party preferences, and are in turn those more likely to be persuaded by the output of the VAA.

The academic literature on campaign innovations locates the spread of VAAs within a broader trend in the post-modern campaigning environment, i.e., the growing presence of non-party actors who "communicate" in electoral campaigns without running themselves for office (Farrell and Schmitt-Beck, 2008). Like traditional media, they relay information about parties' positions to voters. Unlike other sources, however, they provide personalized political information. Voters do not simply go to a VAA website to inform themselves about parties' positions, but to match their personal political profile with the

parties' offer (Boogers and Voerman, 2003). In doing so, they open themselves up for political self-persuasion. In the following section we will discuss the theoretical bases for political self-persuasion to take place. By doing so, we will refer to a hypothetical scenario in order to illustrate the very logic of political self-persuasion.

3. Logic

How does VAA-generated, tailor-made political information lead to self-persuasion among users of these online platforms? Before delving into the empirical findings offered in the literature so far, we propose a theoretical discussion of the logic underlying our argument. For the sake of clarity, we apply the heuristic of a scenario in which a random citizen of a random country is using a VAA developed for the upcoming elections.

Our citizen, let's call her Tina, is curious about the upcoming national elections and ready to learn more about the candidates and parties running in her voting district. She would probably locate herself somewhere at the intersection of checkers and seekers. There are eight parties running for seats in Parliament and all of them propose a list in Tina's district. *cleverpolitics.com*, a widely known VAA, has coded the positions of these parties on 30 policy statements, ranging from "the legalization of same-sex marriages is a good thing" to "The wealthy should be taxed more heavily". Tina goes online and takes a position on each item. She also adds saliency to each of them, indicating how important an issue is to her. A simple algorithm then produces a match list with all eight parties running in the election listed according to their overlap with Tina's views.

Now Tina did have certain political priors before login on to *cleverpolitics.com*, i.e. she did have some kind of political interest, party preferences and vote intentions. With the exposure to personalized information provided by *cleverpolitics*, Tina will not only learn more about politics in general, i.e. where the eight parties stand on the issues in the campaign, but she will most crucially learn more about *her own* politics, i.e. where *she* stands vis-à-vis the positions taken by each party on each issue. Therefore, the VAA-generated information is fundamentally different from two main forms of information Tina is exposed to during a campaign: information provided by campaigns themselves and expert or media-generated information.

First, campaigns are information providers that use all sorts of channels for bringing their message to Tina: classic techniques include direct mailing, phone calls, emails, canvassing, TV commercials, Internet-based ads etc., all of which are geared towards political persuasion. By employing these techniques campaigns primarily try to persuade voters to turn out, to cast a vote in favor of their candidate, to donate money and to help the campaign by spreading the message among colleagues, friends and family. Messages are at best only marginally personalized and generally fail to offer objective comparisons with competitors' stances. Second, VAA-generated information is also fundamentally different from traditional information provided by experts and the media and that is not designed to persuade voters but rather to educate citizens about the

stances of candidates and parties on the issues at stake. This latter form of "objective" information targets the entire voting population, sometimes sub-groups, such as the young, the elderly and so on. But it is almost never aimed at an individual person, such as Tina, taking into account the views Tina has and adapting the information to these views.

What these two forms of campaign information have in common – the information provided by campaigns themselves as well as those produced by experts and the media – is their high level of abstraction. Such traditional information resembles horoscopes that are provided for any interested aquarius or libra. VAA-generated information, on the other hand, is Tina's political palm reading. The information output is contingent on Tina's views on politics.

The tailor-made information reveals Tina's position within a political landscape populated by parties. It is not only a map of electoral politics but has a geolocation function, indicating Tina's position on the map similar to the blue dot in our smartphone applications. This particular form of precise information, based on Tina's stances on 30 political issues, may lead to two consecutive processes: first, Tina may take internalize this personalized information, increase her knowledge and generally learn from this information. Second, and as a potential consequence, Tina may update her political priors on where she stands with her political preferences vis-à-vis the electoral offer and even with her general attitude towards taking part in an election. And this process of updating can take the form of self-persuasion.

For this translation of the newly acquired knowledge about her own politics into modified political preferences, such as vote intentions, or even into behavior, a number of preconditions might have to be met. First instance, Tina probably needs to trust *cleverpolitics.com* to provide her with objective information. It is sound to assume that he more transparent the tool, i.e. the coded positions of parties and the matching algorithm used, the higher the probability of its users to trust the platforms. Classic media studies have found that "trust in the media" serves as an important individual level moderator between the media and its user. The higher a media's credibility, the higher its influence (Hovland 1954, Eagly & Chaiken 1993, Santana Pereira 2012) In our scenario, *cleverpolitics.com* does have these credentials and Tina does trust its output. Second, the strength of attitudinal priors makes it more or less likely that the newly acquired information changes, for instance, Tina's vote intentions. Experimental research has shown that this is indeed the case (Taber & Lodge 2006).

Let us assume that Tina is ready to trust the VAA-generated, personalized and tailor-made information. The match list shows that the Yellow Party matches her preferences best. This does not come as a surprise to her, as so far, her most preferred political party was, indeed, the Yellow Party. Tina also had the strongest vote intention for the Yellow Party prior to using *cleverpolitics.com*. The result of the VAA therefore confirms her top-placed vote intention and reinforces the latter. Exposed to the tailor-made voting recommendation, which matches her policy preferences with the stances of all parties running in the elections, Tina persuades herself that she was right from the outset. Her vote intention for the Yellow Party gets strengthened. So what was the mechanism at

work in our scenario? It is a typical mechanism of self-persuasion, where "people [are placed] in situations where they are motivated to persuade themselves to change their own attitudes or behavior" (Aronson 1999, p. 875). Contrary to the direct impact of techniques of persuasion, where a receiver of information knows that the sender's intention is to persuade the receiver, the impact of VAA-generated information is indirect. The information is generated by a politically neutral medium – the VAA - and contingent on the receiver's own political stances.

In our scenario, Tina's prior vote intention is confirmed by the tailor-made information. This confirmation leads to self-persuasion, similar to the well-known process of motivated reasoning (Kunda 1990, Lodge and Taber 2000, Taber and Lodge 2006, Lodge and Taber 2013, Colombo 2015). In the case of motivated reasoning, subjects make use of information in a biased way, i.e. only the information that confirms their beliefs and therefore protects them from cognitive dissonance. In the case of VAA-induced self-persuasion, the information used by Tina is partly her own, i.e. the result of the VAA is not exogenous to her preferences. This in turn makes it much easier for Tina to be self-persuaded by the result, both cognitively and possibly even emotionally, as the VAA works as some kind of political mirror of herself. The personalized, tailor-made information provided by the VAA thus activates both cognitive and emotional processes, consistent with more recent insights on motivated reasoning (see for instance Marcus, Neuman & MacKuen 2000, Marcus 2003, Mutz 2006, Lodge & Taber 2013). Note that if instead of the Yellow Party Tina would have found herself facing the Orange Party on top of her match list, the mechanisms of self-persuasion would have worked in a fundamentally similar way, albeit possibly with less stringent results. As we will see in the empirical part of this contribution, it would have taken more for Tina to switch her primary vote intention than to reinforce her prior one.

In our example, the process of self-persuasion led to a reinforcement of Tina's initially expressed vote intention. In parallel, however, the VAA generated information typically shows the proximity of the user to all the parties running in the election. The probability is therefore quite high that more than one party comes close to Tina's preferences, therefore augmenting her choice set. Tina becomes not only more convinced about her primary vote intention, the Yellow Party, but also the Orange Party as well as the Purple Party, lagging only little behind the best-matching political offer. In such a scenario, Tina may, again through the mechanism of self-persuasion, update her priors also with regard to the Orange and the Purple Parties, strengthening her vote intentions for these two parties. The result of this process is ambivalence. Tina becomes an ambivalent partisan due to the "conflicting partisan evaluations" (Lavine et al. 2012) she is confronted with.

Self-persuasion may lead to combinations of effects that have been, so far, treated largely separately in the literature. For instance, VAA exposure may lead to both motivated reasoning, reinforcing one's prior vote intention *and* to ambivalence, by creating in the user some form of electoral availability (Mair 1987, Bartolini & Mair 1990) to alternative parties. Finally, VAAs may also have an effect on the intention to turn out. Depending on the VAA output, a user may

become more or less inclined to turn out in the election. In the following section we present an overview of the research conducted so far in the field of VAA studies. In particular most recent, experimental results confirm the logic of self-persuasion presented above.

4. The Effect of VAAs on Their Users: A Review

In this section we concentrate on three different types of effects that can be imputed to VAAs. First, VAAs provide a particular form of information about parties and party positions that may ignite a number of *cognitive* effects, mostly in terms of increasing interest in and knowledge about politics. Second, the VAA output may provoke self-persuasion effects in terms of vote intentions and, potentially, even behavior, similar to the ones we discussed above. Finally, the intentions to turn out and, again potentially, even behavior, may be affected by this new type of campaign information sought by its users.

4.1. Cognitive effects: Information-seeking and political knowledge

Several studies in the field of VAA research confirm the idea that usage of these platforms during the campaign improves a user's knowledge about political matters. Ladner (2012) reports that over four *smartvote* users out of five indicate that using the VAA improved their knowledge of the 2011 Swiss election. Kamoen *et al.*'s (2015) analysis of the 2012 Dutch parliamentary election provides evidence that VAA usage increased users' factual knowledge of political parties and party standpoints. Similar figures are reported by Schultze (2014) for the case of Germany. These knowledge effects appear larger for young users (Ladner *et al.,* 2009) as well as among those who consider VAAs to be a "serious" advice instrument (Alvarez *et al.,* 2014a; Kamoen *et al.,* 2015). Significant VAA-effects have been witnessed also in the domain of information-seeking behavior. A number of post-test surveys conducted among *Wahl-O-Mat* users in Germany show that between 50 and 60 per cent of respondents declare to be motivated to collect further political information after having been exposed to the VAA (Marschall, 2005; Marschall and Schmidt, 2010). Similar figures are reported in the cases of Finland (Mykkänen, Moring and Pehkonen, 2007) and the Netherlands (Boogers, 2006).

4.2. Self-Persuasion Effects on Party Preferences, Vote Intentions and Vote Choice

Let us turn now to the central question of this contribution, i.e. the detection of self-persuasion effects due to VAA exposure. Existing research has so far focused on the following key questions: *do VAA users change their pre-existing party preference/vote intentions in line with the advice provided by the tool? And under what conditions do such effects take place?*

As to the first question, it is worth noting from the outset that the large majority of VAA users would appear relatively unaffected by the VAA in terms of *switching*

party preferences or vote intentions. Making use of pre-electoral opt-in data from the EU Profiler, a recent cross-national analysis finds indeed that a large majority of those users who are advised to vote for a better-fitting, alternative party from their preferred one are hardly affected by the VAA output. Only a minority (i.e., about 8 per cent) of EU Profiler users switched their party preference in line with the party proposed by the application (Alvarez *et al.,* 2014). Similar results are reported in national case studies from Belgium (Nuytemans et al., 2010), Finland (Mykkänen *et al.*, 2007), Germany (Marschall 2005), and Switzerland (Ladner et al., 2010).

However, when switching occurs, the mechanism behind this rather radical effect is fundamentally cognitive in form. As Alvarez et al. (2014) show, switching party preferences is best explained by the size of the distance between the user and the best-matching party. This distance corresponds to what Alvarez et al. call the representative deficit: the lower the match between the best-matching party's standpoints and the voter's preferences, the higher the representative deficit. The representative deficit becomes, in Alvarez et al.'s study, the best predictor for switching party preferences post-VAA-exposure. The underlying reasoning stems from the intuition that the revealed proximity between the user and the parties may, under certain conditions, lead the user to a learning process that eventually affects his political behavior. The representative deficit is precisely the conditioning mechanism that makes users more likely to take their revealed preferences into account. A low representative deficit can be interpreted as a convincing political self-portrait. It shows the users that "their" party – that is, a party that greatly overlaps with their policy preferences – does indeed exist. Alvarez et al.'s findings provide evidence that VAA users are responsive to the voting advice provided by the tool. Yet, they do not blindly follow the personalized suggestions but do so only when they are shown convincing levels of overlap between their views and the best-ranked party's positions.

Arguably the largest proportion of VAA users remain either unaffected by the VAA output (Wall et al. 2014) or find themselves in the situation of Tina. Indeed, most recent experimental research could show that VAA exposure leads to causal effects on vote intentions among its users (Pianzola et al. 2015). In a randomized field experiment carried out during the 2011 federal elections in Switzerland, Pianzola et al. could empirically prove the existence of self-learning mechanisms. They part from the idea of Bayesian learning theory according to which exposure to new information may lead to an updating of priors. If in the context of a VAA this updating takes place, then the VAA user will find herself with a set of posterior beliefs that are different from her priors (Fiorina 1977 & 1981, Achen 1992, Alvarez 1998, Bartels 2002, Lenz 2009). As in the case of Tina, preferred parties became even more preferred by their users following VAA exposure: prior vote intentions for a given party therefore become strengthened due to the personalized information provided by the VAA. At the same time, and again identical to our scenario with Tina, alternative parties became electorally attractive to users. The latter significantly expanded the

number of parties for which they harbored strong vote intentions.[1] Both mechanisms of motivated reasoning and of ambivalence generation were operating, so the authors of this study argue. In other words, self-persuasion mechanisms were at work, leading to an updated structure of vote intentions predicted by theory. What remains unclear, however, is to what extent these self-persuasion effects persist across time. According to one of the most prominent scholars in the field of self-persuasion, Elliot Aronson (1999, p. 875), "self-persuasion strategies produce more powerful and more long-lasting effects than do direct techniques of persuasion". Future – potentially experimental research – will have to address this important question in the field of political attitude formation.

When it comes to actual voting behavior, in terms of partisan choice, research so far only points to limited effects of VAA exposure. Political preferences can be thought to be more responsive (that is, malleable) to the external stimulus provided by the voting advice *vis-à-vis* actual vote choices. Indeed, on the basis of a multi-wave (i.e., pre/post electoral) panel of Flemish voters, Walgrave et al. (2008) demonstrate that the reported intention to alter one's vote choice in accordance with the advice provided is not always matched with actual changes in voting behavior. According to Walgrave et al. (2008, pp. 65-66) only a minority of users reporting a change of vote intention also behaved accordingly at the polls.

As it appears then, voters do not uncritically follow the advice obtained by the VAA – regardless of how much it simplifies the political decision-making process. After all, VAAs are only one among many competing information sources available to voters during a campaign. Most importantly, however, VAA generated information may result in self-persuasion, solidifying one's prior vote intention and, in extreme cases of convincingly strong overlap with a party different from one's initially preferred one, switching of vote intentions. In both cases it is the quality of the personalized information that affects its users. In parallel, at lower levels of partisan attachment, VAA exposure may lead to a widening of electoral choice sets. When VAA output shows its user that alternative parties are not so far from her preferred party, these alternatives enter an enhanced structure of vote intentions. As a result, the user becomes more of an ambivalent partisan.

4.3. Persuasion Effects: Electoral Participation

As mentioned in the section on the logic of VAA effects, users may not only be affected in her vote intentions. Their initial propensities to turn out may be equally impacted on by this particular form of personalized campaign information. Indeed, existing research on VAA usage and electoral participation grounds on the *civic voluntarism* model, which postulates that political resources, such as information and knowledge, are a key precondition for participation (Verba *et al,* 1995). With more information, citizens are better able to make

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[1] Note that due to the PR and open list electoral system in Switzerland, voting for more than one party is possible.

sense of their own position relative to the electoral supply and thus more likely to cast their ballot in elections. Available studies of the impact of political knowledge on electoral participation confirm that higher levels of political information increase the likelihood of voting (Palfrey and Poole, 1987; Delli Carpini and Keeter, 1996; Lassen 2005). Accordingly, the individual-level probability to cast a vote can be postulated as inversely proportional to the effort required in gathering enough information. A number of costs are involved in the process of becoming sufficiently informed, namely: *procurement*, i.e., gathering the relevant data; *analysis*, i.e., undertaking a factual analysis of the data; and *evaluative,* i.e., relating data and/or factual analysis to specific goals (Carmines and Huckfeldt, 1996: 245). With several issues at stake and a multitude of parties and/or candidates running for office, the task of gathering information may augment the cost of voting up to a point that overcomes benefits, thus possibly keeping away citizens from the ballots. In the low-information rationality framework, voters are expected to minimize this effort by relying on whatever 'free' or inexpensive information can be picked up (Popkin, 1991). In this sense, the wide amount of readily available information about politics and political parties provided by the VAA contributes to reducing the transactional costs involved in gathering relevant political information and increasing the likelihood of voting in turn.

For VAAs to bear an actual effect on electoral behaviour, however, improving knowledge is a necessary yet not sufficient condition. Discovering one's position *vis-à-vis* the political parties running in the election cannot be expected to lead the user to participate in a mechanical fashion. Her views need to be *echoed* to a reasonable extent by at least one of the available alternatives. This is where the crucial role played by tailor-made political information kicks in. Again, a recent study using observational data focuses on the concept of representative deficit discussed above (Dinas et al. 2014). According to its authors, VAA usage may have both a participation and an abstention enhancing effect, depending on the user's distance from the electoral offer. For instance, a perfect overlap with a political party may incentivize a user to go to the polls, while a user with a large representative deficit, finding himself to be somehow far from all parties, experiencing a sense of "political solitude" may discourage him from turning out. To use a simple commercial analogy, if the offer displayed in the vitrine does not match the demand, the context for entering the shop is unfavorable (Dinas *et al.*, 2014: 292).

The first studies investigating the impact of VAAs on electoral participation were conducted by Stefan Marschall and his team focusing on the German VAA *Wahl-O-Mat.* In both the 2004 and the 2009 German Federal elections, more than one out of ten users declared to "feel more motivated to turn out because of having used [that] VAA" (Marschall, 2005; Marschall and Schmidt, 2010). In the same years, another research group led by Andreas Ladner began analyzing the electoral impact of the Swiss VAA *smartvote.* Their early analysis of the 2007 federal election found about forty per cent of respondents declaring that using the VAA had a "decisive or at least slight influence on their decision to go to the polls" (Ladner and Pianzola, 2010). On the basis of these data, Fivaz and Nadig (2010) concluded that the overall turnout in that election could have been about

5 per cent lower had the *smartvote* platform not been made available to Swiss voters.

A critical issue with the aforementioned studies lies with their exclusive reliance on opt-in surveys administered to users right after having been exposed to the VAA. In other words, the influence exerted by the VAA on users is measured through self-assessment and *only* among those who are willing to fill the opt-in survey. Apart from being subject to a heavy self-selection bias, this type of data does not even assure that subjective estimates of impact will match with actual changes in terms of preferences and behavior.

In order to address this issue, VAA researchers have turned to mass survey data. Marschall and Schultze (2012) take advantage of a pre-electoral wave of the German Longitudinal Election Study (GLES) and find a 6 per cent increase in the probability to cast a ballot among VAA users as compared to non-users. However, their study suffers from rather low levels of external validity because the dataset employed consists of a quota sample of the German online population. Moreover, the dependent variable is measured before the election, so one cannot be sure whether turnout intentions get actually converted into electoral participation.

To overcome these limitations, a growing number of studies have resorted to data collected by national election studies. Working with nationally representative samples substantially increases the external validity of the findings. At the same time, the structure of post-election surveys allows for factual measures of VAA usage (rather than subjective assessments of impact) and actual voting behavior. Gemenis and Rosema's (2014) analysis of 2006 Dutch Parliamentary Election Study (DPES) data estimates, by means of simulation, that the presence of VAAs was responsible for 4.4% of the reported turnout in that election. The aforementioned analysis by Dinas *et al.* (2014) on European Election Study (EES) data shows that even after controlling for a wide set of socio-structural, attitudinal and behavioral variables, the individual-level probability to cast a vote in the EP election of 2009 was 14 percentage points higher for VAA users as compared to non-users.

This inventory of studies, by and large confirming the hypothesized positive association between VAA usage and electoral mobilization, highlights nonetheless commonalities in terms of their exclusive reliance on case studies. To put the mobilization hypothesis to a more demanding empirical test, Garzia *et al.* (2014) performed a cross-national, longitudinal analysis of eleven election study datasets from four different European countries [Finland (2003, 2007, 2011), Germany (2009, 2013), The Netherlands (2003, 2006, 2010, 2012), and Switzerland (2007, 2011)]. The authors found strong effects of VAA usage on electoral participation in each country/election under analysis.

At this point, however, it is worth pointing out that such cross-sectional data has its own limitations when it comes to causal inference. VAA use is not randomly assigned to individuals. It is the respondent, rather than the researcher, who decides whether to use a VAA for the elections or not, thus self-selecting themselves into the "treatment condition" (in this case, using a VAA). If the decision to become a VAA user and the decision to go to the polls have common determinants that are either unmeasured or unknown, estimates from a regular

regression model will be biased. The selection process might systematically distinguish VAA users from non-users, and if those differences are also predictive of electoral participation then regular regression methods will provide biased and inconsistent results (Wooldridge, 2002). Hence, the ideal scenario for a causal assessment of VAA effects on users' patterns of electoral mobilization remains using a randomized experimental design.

Only a very limited number of experimental studies of VAA effects have been conducted so far. Vassil's (2012) analysis of the 2009 Estonian election to the European Parliament finds very weak effects of VAA usage on participation. As his study population consists exclusively of university students, however, the findings are of limited external validity. A similar problem afflicts the study by Maheo (2014) who administered her "treatment" only to a subsample of voters in a low-income voter neighborhood in Montreal during the 2014 Quebec provincial election campaign.

An experimental analysis of VAA effects involving a nationally representative sample of voters is that already mentioned by Pianzola et al. (2015) in the context of the Swiss Federal election of 2011. Yet another one was carried out by Enyedi (2015) in his analysis of the 2010 Hungarian parliamentary election. Both studies suffer from a low "first stage", given the wide availability of the corresponding VAAs to the subjects included in the respective control groups. To overcome the limitations stemming from the existing studies, we have set up an experiment in the context of the most recent parliamentary elections held in Italy, on February 24th 2013 (Garzia and Trechsel, 2015). The Italian case can also be considered an ideal "laboratory" for the assessment of VAA-effects in the context of real-world elections. The country is in fact characterized by a surprising lack of VAAs made available to voters (Marschall, 2014). Concerns with respect to the first stage are further minimized by our decision to resort to a "mock" VAA platform. Through an invited accessibility design, the experimental VAA platform was in fact accessible only to the respondents in the treatment group. In this way, we were able to overcome the main shortcoming of inherent to the existing studies without the need to indulge in the unpractical (as well as unethical) exercise of denying a group of citizens access to a VAA, while incentivizing others to use it. The experiment was embedded in a multi-wave CAWI panel of the Italian National Election Study (ITANES). The panel design of the study was especially useful for the purposes of the experiment as it allowed not only to measure the outcomes of interest after the election, but also to measure baseline attitudes and behavior before participants' exposure to the treatment. Our results provide further evidence for the positive impact of VAAs on electoral participation (see *Figure 2* below) that we could quantify in a 5 percentage point increase in the predicted probability of being mobilized across the campaign due to study participants' exposure to the VAA. Indeed, the delivery of readily available, tailor-made political information to users does not only appear to enhance their knowledge about party standpoints: it provides them with a clear overview of where parties stand compared to their own opinions, possibly motivating them to take advantage of their right to vote. We believe that, again, self-persuasion mechanisms are at work, by which a majority of VAA users trust the information, like the experience, learn about politics, etc.

to the point that participation in the elections become both personally and socially desirable to them.

Figure 2: probabilities to turn out in 2013 Italian national elections' experiment
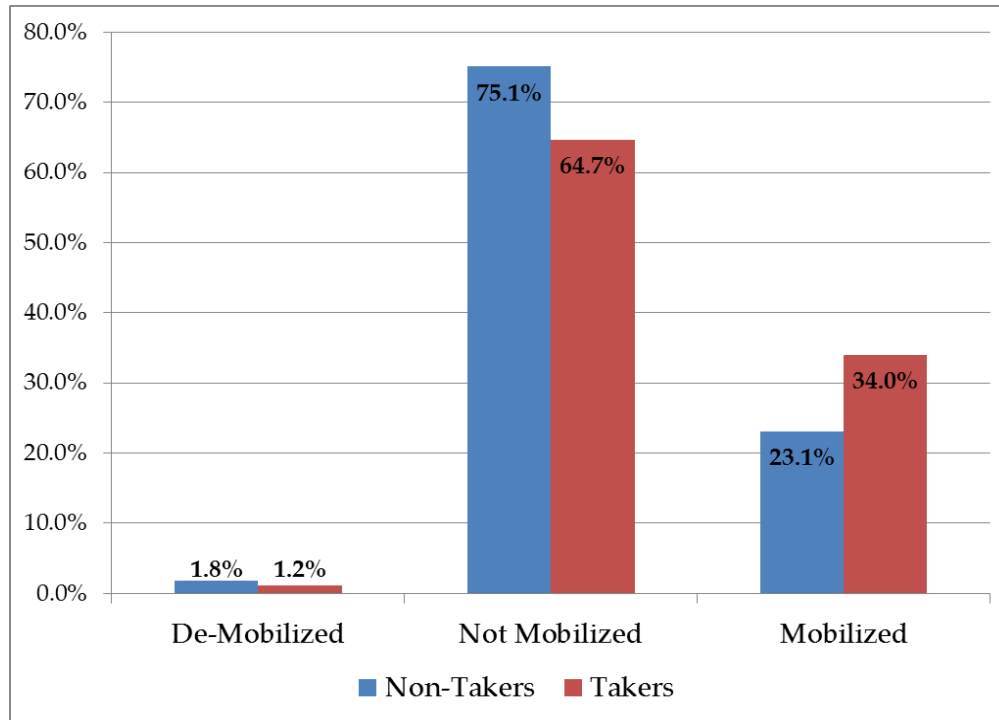
Source: Garzia & Trechsel 2015

5. Conclusions

Coming soon…

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