Research on Voting Advice Applications: State of the Art and Future Directions

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Voting Advice Applications (VAAs) have experienced a great deal of success over the past decade, and are now used in many countries around the world. This editorial introduces a special issue resulting from a section of the 2015 European Consortium for Political Research (ECPR) conference in Montreal, organized by the ECPR's official VAA Research Network. It discusses the global spread and the popularity of these tools, addresses the history and different branches of VAA research, the current state of the art, and the remaining puzzles in the field. It also focuses attention on the wealth of research that is examining the effects of VAAs on political parties, candidates, and voters, as well as how VAA design choices affect the advice given to voters and their subsequent voting behavior. We hope this special issue will also highlight the potential of VAA-generated data for studying party positioning over time and across countries, allowing for comparative analyses of the characteristics and development of parties and party systems.

Introduction

Voting Advice Applications (VAAs) have experienced a great deal of success over the past decade. They are now used in many countries around the world, and previously isolated VAA research efforts and projects have recently been pooled in an effort to establish a research community focusing on the idea, design and implications of these tools. This special issue of *Policy & Internet* gathers

together articles first presented at a section of the 2015 European Consortium for Political Research (ECPR) conference in Montreal,[1] organized by the ECPR's official VAA Research Network. By bringing together these articles we hope this special issue will help focus attention on the wealth of research that is examining the effects of VAAs on parties, candidates, and voters, and how VAA design choices affect the voter advice given and subsequent voter behavior. We also hope the issue will highlight the potential in VAA-generated data for studying party positioning over time and across countries, allowing for comparative analyses of the characteristics and development of parties and party systems.

Voting Advice Applications are Internet tools deployed before elections to assist voters in their electoral decisions by comparing their policy positions with the programmatic stances of political parties and/or candidates. Users of the tools are invited to fill in a web-based questionnaire to mark their positions on a range of policy statements. After comparing a user's answers with the position of each party and/or candidate on the various statements, the application provides a result in the form of a rank-ordered list or a graph displaying which party or candidate stands closest to the user's policy preferences (see Figure 1).

Figure 1. Typical visualizations of VAA results: rank-ordered list (left) and bi-dimensional political space (right)
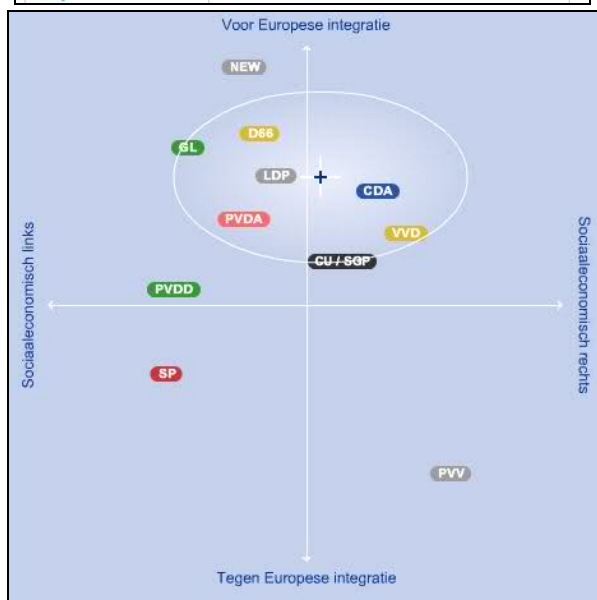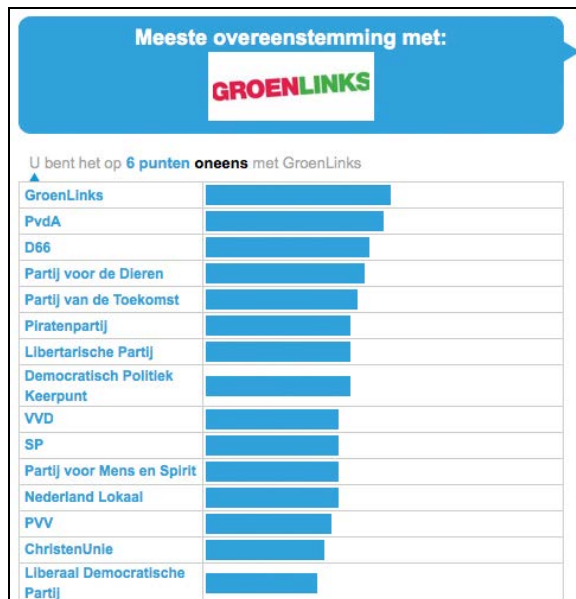
Sources: www.stemwijzer.nl (left) and www.euprofiler.eu (right)

VAAs have experienced a great deal of success over the past decade. They have been set up in many political systems across the globe—mostly but not exclusively in established democracies. VAAs have also been implemented at subnational levels as well as transnationally, most notably in the European Parliamentary elections of 2009 and 2014. VAAs are not only used in many

countries in Europe and all over the globe, they have also been used by a remarkable share of the electorate in many countries, thereby becoming an increasingly relevant factor within modern political campaigning.

This amazing success story has attracted the attention of social scientists, who have started to try to understand the way VAAs operate and affect voters. A feature of this kind of research is that, in contrast to the way many other online phenomena are studied, VAA research is very often intermingled with the construction of these tools. A number of VAAs have been built by social scientists (for example, the EU Profiler 2009); providing them with the opportunity to collect valuable data by constructing these tools according to their research interests and needs, such as by including survey questions in the questionnaire or by manipulating the design quasi-experimentally and thereby controlling for particular effects.

In recent years, previously isolated VAA research endeavors and projects have been pooled in an effort to establish a research community focusing on the idea, design and implications of these tools. This has resulted, among other things, in the institutionalization and establishment in 2015 of an official VAA Research Network embedded in the structures of the European Consortium for Political Research (ECPR), which regularly organizes sections at the annual General Conferences of the ECPR.[2] One of these sections took place at the General Conference in Montreal, Canada, in September 2015, with the presentation and discussion of about 20 papers. This is where the idea of this special issue was born.

The motivation for the Montreal section as well as this Special Issue is the fact that—like the tools themselves—VAA research has experienced a tremendous distribution across countries, yielding an opportunity to exchange research experiences across continents. In the first section of this introduction we will examine this global spread of Voting Advice Applications and their popularity among voters, before focusing on the expansion of VAA research and the current state of the art in the field. Finally, we present the outline of this Special Issue. One aim of the issue is to demonstrate how VAA research can build bridges to other fields of political science, by overcoming the concentrated perspective of traditional VAA research, which primarily tries to understand the

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[2] More information about the VAA Research Network can be found at: http://www.vaa-research.net/

logic and the effects of the tools themselves.

The Proliferation of VAAs Across Countries and Voters

A recent attempt to map the distribution of national and transnational VAAs identified almost complete coverage among European countries (Marschall, 2014). In many countries such as the Netherlands, but also Belgium, Germany and Finland, there was even more than one tool operating—indeed, we found more than one VAA in most European countries.

On the basis of a more recent census conducted by the ECPR VAA Research Network—now going beyond the European borders—the global spread of this phenomenon has become even more evident. As shown in Figure 2, VAAs have been deployed in North America (US, Canada, Mexico), Oceania (Australia, New Zealand), North Africa / Middle East (Tunisia, Egypt, Israel, Turkey), South America (Venezuela) and Asia (Taiwan). Thus, Voting Advice Applications have become a truly global phenomenon.

Still, Europe seems to be "the" place where VAAs currently flourish. However, this observation could be biased by the fact that we started our surveys of VAAs within European research networks. At first glance, VAAs are a phenomenon found primarily in established democracies—a plausible finding, given these tools are functionally tightly connected to open elections in a truly competitive environment. But Voting Advice Applications have also been implemented in new democratic systems or transformational states like Tunisia and Egypt, indicating that these tools could be functional in processes of regime change.

Figure 2. Preliminary results of the VAA Global Census, as of August 2016 (http://vaa-research.net).
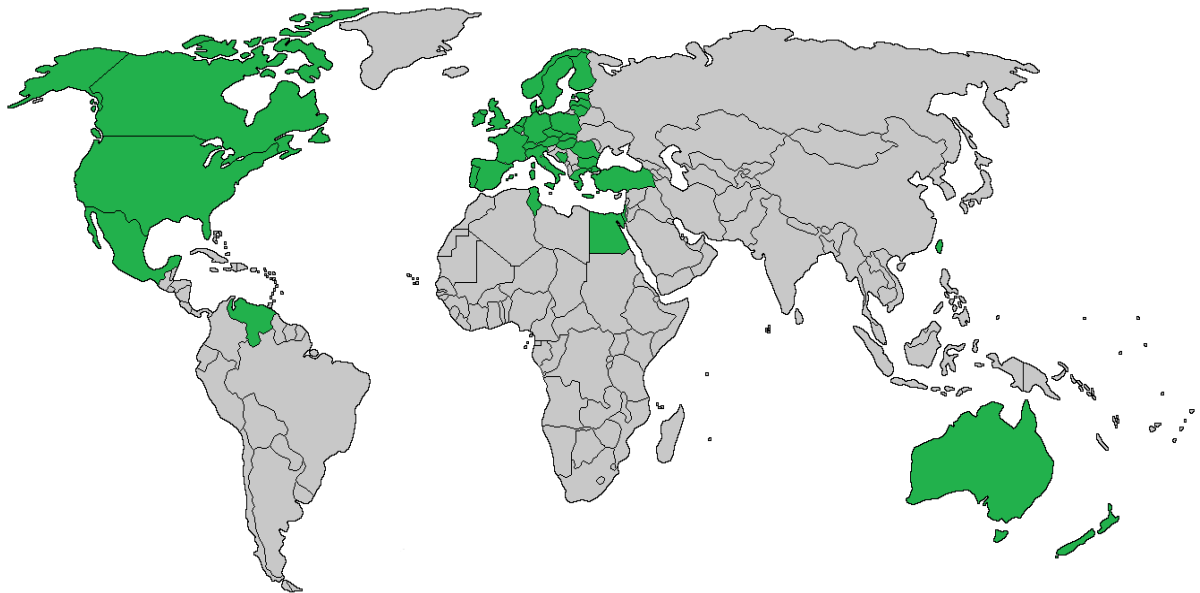
Turning to the usage of these tools, it is evident that in at least some of these countries, VAAs are extremely popular web applications. Leaving aside the problem of how exactly to count user numbers (for a better discussion, see: Marschall, 2014), we observe—based on the aforementioned global census of VAAs—that in some countries VAAs are used by a remarkably large share of the electorate. In absolute numbers, the German VAA *Wahl-O-Mat* still takes the lead with 13.3 million usages in 2013. In relative numbers, cases such as the Netherlands or Finland are at least as impressive: in 2012 about half of the Dutch electorate used at least one of the Voting Advice Applications offered for the national election, and similar figures can be obtained for the case of the Finnish election of 2011.

In many cases we see a steady increase in usage numbers. In general, the usage figures tend to rise when a VAA is implemented for a second time and thereafter. Still, there is high variance between countries, indicating that certain conditions seem to be beneficial for the establishment of these tools. In the literature, it has been assumed that multi-party systems based on proportional representation prepare the ground for VAAs more than, for example, two-party systems with a majority representation system—which could explain the so far low usage of VAAs in Anglo-Saxon countries (Garzia, 2012). Or it could be that

rather simple and situational factors contribute to the success of such tools in a country, e.g., whether the usage of the tool is accompanied by a larger media campaign. As a matter of fact, in some European countries (Sweden, Norway, Denmark) comparatively successful VAAs have been implemented by the media themselves (e.g., newspapers), thereby profiting from cross-media publicity.

The Proliferation of VAA Research

The proliferation of these tools has inspired research in many countries, and in recent years we have seen a number of research projects, conference papers and journal articles. Several edited books and special issues dedicated solely to Voting Advice Applications have also appeared (Cedroni and Garzia, 2010; Triga et al., 2012; Garzia and Marschall, 2014; Marschall and Garzia, 2014; Rosema et al., 2014; Dumont and Kies, 2015). And new studies are still springing up like mushrooms. VAA research has focused on a broad range of aspects concerning the implementation of these tools, their characteristics, and their role in modern political campaigning. But VAA data have also been used for purposes beyond these issues.

VAAs and their Effects

A large share of the literature turns on the question of the effects of VAAs on the political actors who are involved in making and using them. While only recently have we witnessed the emergence of research on the effects of VAAs on parties and individual candidates (Garzia et al., 2014), the media (Krouwel et al., 2014) as well as "democracy" itself (Cedroni, 2010; Garzia and Marschall, 2012; Anderson & Fossen, 2014; Fossen and Andreason, 2014; Fossen and van den Brink, 2015), much more attention has been paid to the effects of VAAs on the micro level of the individual voters. This should not come as a surprise given it was the original idea of these tools to inform and mobilize individual voters (Marschall, 2005).

The focus on users typical of the first stage of VAA research was guided by the question of what could be said about these people, as the composition of the user group moderates the impact these tools have. The central (early and

robust) finding of this research was that VAA users are not at all representative of the electorate. This group is indeed quite special, not only in terms of their demographics (Boogers and Voerman, 2003; Hooghe and Teepe, 2007; Wall et al., 2009), but also in terms of their media consumption (Hanel and Schultze, 2014) and political interest and attitudes (Marschall and Schultze, 2014). These observations have led to the notion that the typical VAA user is young, male, politically highly interested, and highly educated (Marschall, 2014). However, it has also been argued that this dominating picture impedes our perception of the heterogeneity within the group of VAA users, which is important to take into consideration when it comes to identifying and differentiating effects (van de Pol et al., 2014).

There is also debate within the research community on which kinds of data are appropriate to draw conclusions about user profiles and the effects these tools could have on them. The available studies show that opt-in survey samples and representative samples on VAA users (e.g., as provided by National Election Studies) differ in a lot of respects (Marschall and Schultze, 2014). In an attempt to overcome the shortcomings of these kinds of data, methods to clean and standardize opt-in samples have been proposed and applied (Andreadis, 2014).

When analyzing the effects of VAAs on their users, two forms of effect have been distinguished: (a) effects addressing the cognitive dimension (political interest and political knowledge), and (b) effects on the behavioral dimension (electoral participation and party/candidate choice). In many cases, cognitive and behavioral effects are not clear-cut, as an increase in political interest and knowledge could result in an actual change in political attitudes and behavior (Garzia, 2010).

Concerning the cognitive effects, the available studies confirm the assumption that VAAs improve user knowledge about political matters during the campaign (Schultze, 2014; Westle et al., 2014; Kamoen et al., 2015). These knowledge effects appear to be larger for young users (Ladner et al., 2009) and for those who consider VAAs to be a "serious" advice instrument (Alvarez et al., 2014; Kamoen et al., 2015). Moreover, VAAs have been found to prompt users to collect further information about parties, candidates and the election campaign, setting off long-term cognitive effects. Post-test surveys conducted among the users of the German *Wahl-O-Mat* show that over half of respondents reported feeling motivated to collect further political information as a result of having performed the VAA test (Marschall, 2005; Marschall and Schmidt, 2010). Similar

figures are reported in the case of Finnish users (Mykkänen et al., 2007).

Indeed, mobilizing information seeking and the respective cognitive effects on users would seem to be conducive to behavioral effects, both in terms of electoral participation and party/candidate choice. Accordingly, results from the existing research on VAA effects on participation are relatively straightforward: VAA usage would seem to be systematically linked to an increased propensity to take part in elections, regardless of the methodology employed by the various available studies. In this respect, the findings stemming from early analyses of opt-in surveys of VAA users (Marschall, 2005; Ladner and Pianzola, 2010; Marschall and Schmidt, 2010; Fivaz and Nadig, 2010) are corroborated by statistical analyses of representative survey datasets (Marschall and Schultze, 2012; Dinas et al., 2014; Garzia et al., 2014; Gemenis and Rosema, 2014; Pianzola, 2014) and experimental designs (Vassil, 2012; Enyedi, 2015; Garzia et al., 2016).

More complicated is the issue of VAA effects on party choice. A more complex operationalization is needed, as we must assume an intricate interaction between the propensity to vote for a party, the intention to vote, and the specific VAA result, which could either confirm or contradict the voter's pre-existing party preference. Moreover, finding methods to validly and reliably measure the concrete effect of a VAA on electoral choice is tricky. Using a VAA and casting a vote in an election are two separate actions, which are generally rather distant in terms of place and time. As the actual voting decision can be influenced by many intervening short-term and situational factors, isolating pure VAA effects seems to be almost impossible.

Despite these challenges, the effects on party choice have been a core issue of VAA research. According to the available evidence, the proportion of self-declared swing voters among VAA users appears quite varied across different national settings, ranging from 2–3 percent in Belgium (Walgrave et al., 2008; Nuytemans et al., 2010) to about 6 percent in Germany (Marschall, 2005) and up to above 10 percent in Finland (Mykkänen et al., 2007) and Switzerland (Ladner et al., 2010; 2012). More recent work does not seem to alter these conclusions (Dumont and Kies, 2012; Andreadis and Wall, 2014; Wall et al., 2014; Kamoen et al., 2015). Against the background of these findings, the effects of Voting Advice Applications on vote choice remain an important object of future research—because this is where VAAs could make a crucial difference in terms of their impact on election results.

VAAs and their Design

If VAAs are increasingly used and if they—presumably—make a difference on voters, the key question becomes whether the advice provided by these tools to their users is "correct." Here the methodology of the tool comes into play. In order to match parties/candidates with voters by the logic of VAAs, several methodical decisions have to be made: the choice of the set of statements and the formulation of the statements, the way the party positions are identified, the algorithm used to calculate the proximity of the voters to the parties' positions, and the way in which the results are displayed.

Concerning the selection and formulation of statements, early research has provided clear evidence that the choice and composition of statements make a difference to the result indicated by a VAA (Walgrave et al., 2009; Lefevere and Walgrave, 2014; 2015). The same seems to apply to the formulation of the statements; responses to the statements vary according to how they are formulated, e.g., whether they are put positively or negatively (Holleman et al., 2014; Van Camp et al., 2014).

Regarding the question of how to measure party positions, the makers of the tools apply different methods. Customarily, either the parties themselves deliver their positions to the statements *or* the party stances are settled by experts, e.g., on the basis of the party platforms (Gemenis, 2013; Gemenis & van Ham, 2014). A more recent methodology for party positioning involves an iterative method that aims to improve existing techniques using a combination of party self-placement and expert judgment. This method, pioneered by the Dutch *Kieskompas*, was first employed systematically on a large cross-national scale by the *EU Profiler* VAA in the context of the 2009 European Parliamentary elections (Trechsel and Mair, 2011; Krouwel et al., 2012; Krouwel and van Elfrinkhof, 2013; Sudulich et al., 2014; Garzia et al., 2015). Most recently, as an alternative to the iterative approach, the Delphi method has been tested and applied for identifying party positions—a method which encompasses several interlaced rounds of expert deliberations (Gemenis, 2014).

The methodical debate has also addressed the algorithm that is used to calculate the policy proximity/distance between parties and users. Again, in VAA practice different approaches are applied. The most prominent discussion concerns the question of (not) using dimensions to calculate and display the

party–user proximity (Lowerse and Otjes, 2012; Mendez, 2012; Wagner and Ruusuvirta, 2012; Louwerse and Rosema, 2014; Mendez, 2014; Otjes and Lowerse, 2014; Germann and Mendez, 2015; Germann et al. 2015). The algorithm used has an impact in turn on the way the VAA results (proximity between user and parties) can be displayed.

VAAs as Data Sources

The fact that VAAs have mainly been developed by social scientists has allowed them to profit from the growing number of VAA-generated datasets to investigate topics such as party politics and representation.

A large number of these studies have addressed issues broadly related to the field of party research. For instance, VAA data have been used intensively for identifying political dimensions in different systems by clustering policy positions (Wheatley, 2012; Wheatley et al., 2012; Burean and Popp, 2015; Wheatley, 2015). This research shows that apart from the classical cleavage structures (left vs right, authoritarian vs liberal) other dimensions have emerged that structure the political space in modern democracies (such as pro/anti European integration). VAA-generated data can also provide insights into the extent to which parties translate their pre-electoral positions into policy-making once in power (Ramonaite, 2010; Fivaz et al., 2014). Furthermore, in countries where candidate-based voting systems are in place, VAA data can be employed in the study of intra-party cohesion during the legislature (Schwarz et al., 2010; Hansen and Rasmussen, 2013).

By combining party data with user data, scholars have also identified a so-called "representative deficit" (Alvarez et al., 2014). Looking at the policy positions of voters and comparing them to where their favored parties stand, scholars have shown that parties do not take the positions their voters or supporters assume them to do, neither in national politics (Dalton, 2016) nor in a yet-to-come transnational European voting space (Bright et al., 2016).

Outline of the Special Issue

Reflecting the broad scope and blind spots of research on Voting Advice

Applications, this Special Issue of *Policy & Internet* brings together VAA research articles not only from different continents (Europe, North America, and Oceania) but also from different research angles—articles which try to tackle some of the remaining puzzles.

Of the five articles in this issue, three can be regarded as "traditional" VAA articles, in that they examine the effects of VAAs on electoral behavior, on general models of electoral choice, and (turning to the question of VAA design) the effects of different answer scales on the advice given to users. These can be considered "traditional" inasmuch they focus on the tools and their effects, as well as on their mode of operation. They are also innovative, as they apply new methods in partly new contexts to address these questions.

In her article in this issue, Valérie-Anne Mahéo (2016) speaks to a consolidated subfield of VAA research—the effect of these tools on users' voting intentions. She tackles one of the crucial methodological issues in this strand of literature, namely selection bias, through a full-fledged experimental design in the context of the 2014 Quebec Elections. Considering the multidimensional political space of this political entity, Quebec could indeed serve as an instructive context for testing the effects of VAAs. The results of her experiment indicate—at first glance—that the users of VAAs are more likely to form electoral preferences than non-users. However, she specifies this observation along different user groups regarding age, formal educational attainment and political interest. For most of these subgroups, she could detect only short-term effects of using a VAA. That is why she concludes that VAAs involve users cognitively, but do not make them effectively alter their voting decision.

Andreas Ladner (2016) examines the question of the effects of VAA on voting behavior through the lens of normative democratic theory. Sitting at the crossroads of the literature on democratic representation and that on changing models of electoral choice, his article investigates the possibility that widespread VAA usage can be held responsible for fostering promissory representation and the delegate model of political representation—at the core of which stands the idea that candidates should keep their electoral promises. By relying on an online survey conducted among the users of the Swiss VAA *Smartvote,* he indeed finds evidence that issue voters are not only more likely to follow the recommendations issued by the VAA, but that they also expect elected candidates to keep their promises to a higher extent compared with partisan voters.

The article by Martin Rosema and Tom Lowerse (2016) turns attention to

VAA methodology, by analyzing a rather under-researched topic in the literature, namely, the effect of different answer scales on the voting advice provided to users. Their data derive from a VAA developed for the 2014 Dutch local elections. As is the case with statement selection, party coding strategies and the choice of the matching algorithm, their article shows that answer scales matter— except for voters with an extremist response style. On the basis of their findings, Rosema and Lowerse (2016) discuss the practical implications for VAA designers, suggesting that the voting advice should be presented as a preference list, rather than focusing on the "best match."

The final two articles in the issue illustrate how VAA-generated datasets can be used to address general questions of political science. Data on party positioning can be used to map party systems and to identify the dimensionality of the political space. VAA user data can be used in studies of how attitudes to certain policy issues influence political behavior and electoral decisions.

The article by Jonathan Wheatley (2016) addresses the question of how to survey the political space in England, by overcoming the traditional focus on a left–right cleavage. He argues that in many European societies a new ideological cleavage between "cosmopolitans" and "communitarians" (based on the "winners" and "losers" of globalization) has emerged that draws on cultural rather than economic issues. To test this assumption, Wheatley draws on party position data and user data generated by two VAAs deployed in England in 2014 and 2015. By identifying latent dimensions and mapping the positions of parties and party supporters, he concludes that the political space in England is defined by two main dimensions: an economic left–right dimension and a cultural communitarian–cosmopolitan dimension.

The article by Andrea Carson, Yannick Dufresne, and Aaron Martin (2016) uses VAA-generated data to answer the question whether and how attitudes to specific issues have an effect on the voting decision. For their case study, they turn to the 2013 Australian elections and to the topic of asylum and immigration, which played an important role in it. To answer their question they draw on data provided by the Australian *Vote Compass*, a VAA implemented before the elections. Using these data they were able to include about 438,000 cases (voters) into their calculations—as they argue, a survey of "unprecedented size in Australia." As well as working with this "big" VAA data, Carson et al. (2016) engaged in media monitoring and content analysis of a party's press releases in order to measure the salience of this issue among the public, the media

and the parties. They find that the attitudes of voters toward asylum seekers had an impact on voting intention—particularly in marginal electorates and in the group of voters who care most about this issue.

These last two articles in particular show nicely how much potential lies in VAA-generated data—a potential that has yet to be exhaustively exploited. Much more research could be done with existing and future VAA data if it were processed appropriately. For example, if collected, standardized and compiled systematically, the multitude of party positions documented in Voting Advice Applications could constitute a valuable database for studies on party positioning over time and across countries, allowing for longitudinal as well as cross-country comparative analyses of the characteristics and developments of parties and party systems. Similarly, the collection and harmonization of user data could create a sound and far-reaching database on public opinion on certain policy issues—again allowing for analyses over time and across countries. In this respect, research on Voting Advice Applications has just started.

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