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Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH,
UK



West European Politics

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/fwep20>

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Published online: 27 Oct 2009.

To cite this article: Stefaan Walgrave , Michiel Nuytemans & Koen Pepermans (2009) Voting Aid Applications and the Effect of Statement Selection, *West European Politics*, 32:6, 1161-1180, DOI: [10.1080/01402380903230637](https://doi.org/10.1080/01402380903230637)

To link to this article: <http://dx.doi.org/10.1080/01402380903230637>

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Voting Aid Applications and the Effect of Statement Selection

STEFAN WALGRAVE, MICHIEL NUYTEMANS and
KOEN PEPEMANS

Voting Aid Applications (VAA) helping voters make their decision at the ballots have become more popular throughout Western Europe. They typically consist of a number of statements that are used to match voters with parties. Drawing on a large-scale simulation of 500,000 different configurations of 36 statements and on a random sample of Belgian voters, the paper shows that many of these combinations produce diverging information for the participants. The study establishes that the specific selection of statements has a considerable impact on the 'voting advice' that is produced: some configurations favour certain parties, other configurations benefit other parties.

A new phenomenon in modern election campaigning, Voting Aid Applications (VAA) help voters cast their vote. Drawing upon an internet application, VAAs link a voter's preferences – most of the time answers to precise issue-related questions – to parties' policy proposals or general preferences. VAAs produce a sort of 'advice', or at least an aid, for the participating voter by highlighting the party that stands closest to his or her preferences. VAAs are spreading quickly to ever more countries. In some countries VAAs seem to have become one of the most important players in the election campaign. Not only are VAAs spreading to many European democracies, but also the number of voters participating in VAA and seeking voting advice is growing year by year (for an overview see Walgrave *et al.* 2008b). VAAs' popularity raises important questions as to the value of the voting aid that is being produced by VAAs' underlying algorithms. What is the quality of the aid voters get? Is it a consistent and reliable aid or are VAAs just entertaining games producing random answers to voters' questions for help?

Together with the spread of VAAs to ever more countries, the diversity of the applications has increased. Although basically doing the same thing – matching voters with parties based on both their preferences – the

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differences between VAAs abound. Some VAAs rely on parties' explicit 'authorisation' concerning their stances, others draw on a detailed analysis of parties' official documents; some VAAs weight the statements according to the saliency attributed to the issue by voters or parties, other VAAs just add up all statements giving them equal weight; some VAAs categorise the political space in different dimensions, other VAAs consider the political space as one-dimensional; some VAAs work with statements that tap very precise policy proposals, other VAAs rely on general and ideological statements (for an overview see Laros 2007). So, not all VAAs are based on the same principles. This diversity of VAA systems further underlines the need for a scientific reflection on VAAs' outputs and the quality of the voting aid they produce.

In some of the countries with popular VAAs a political and societal controversy broke out. Some maintained that VAAs are a fraud and would never be able to give correct and neutral voting advice; others contended that these applications must be commended as they focus people's attention on the party programmes and policy issues compelling parties to discuss substance instead of personalities, images, and campaign events (see for example, for the discussion in Belgium, Deschouwer and Nuytemans 2005; Swyngedouw and Goeminne 2005).

In sharp contrast to their amazing popularity, to the pertinent questions about VAA outputs, and to the fierce political debate in some countries, the *scientific* debate about VAAs has hardly commenced. Political science seems to have been taken by surprise and has only just started to think about VAAs. Many political scientists have themselves been heavily engaged in designing VAAs. For some VAAs, political scientists even provide the basic party preference information: in their role of political experts, political scientists sometimes 'estimate' where parties are situated in the political space and what parties *would* answer when confronted with a certain statement (Teepe 2005). This involvement of political scientists in designing VAAs places them in an awkward position when it comes to critically evaluating VAAs and to feeding the debate about VAAs' consequences (Ladner *et al.* 2008). Certainly, there have been some studies tackling the effect of VAA advice on the voter but there have been studies hardly any focusing on the heart of the matter: how do VAAs work? What kind of aid do VAAs produce? And to what extent is the advice VAAs deliver consistent and reliable?

In this paper, we want to start this debate by pinpointing just one aspect of VAAs' make-up: the selection of statements that are incorporated in a VAA system. VAAs typically link a voter's answers to 30+ very specific statements on parties' stances on these same topics. The statements are most of the time items maintaining a certain position and participants have to indicate whether they (totally) agree, neither agree nor disagree, or (totally) disagree with it. The topic, the exact wording, the direction, and the formulation of the statements may all produce differences in answers. Some

statements may benefit some parties, while other statements may work to the advantage of others. Hence, it is not dangerous to hypothesise that selecting topics and formulating statements is key to devising a VAA system that does justice to parties' programmes and gives them a fair chance to persuade the voters. Theoretically, the number of potential statements is infinite and any statement incorporated in a VAA might be replaced by any other statement on the same or on a different topic. No 'natural' or fixed statements are by definition part of a VAA; building a VAA unavoidably means going through a selection process and choosing one statement above another. Apart from statement selection, there are of course many other aspects of VAAs' internal machinery that are worth studying and that most likely affect their output. But in this paper we claim statement selection to be the key process.

The statements in a VAA determine the look and feel of the system; the statements form the most visible aspect of a VAA and they have sparked most discussion in countries where VAA has led to a debate. This is no coincidence as VAA statements form, so to say, the software of the system; they determine what kind of voter preference information gets fed into the system that calculates the best fitting party. Different statements entail that different information is gathered from participants and this, as we will show in this paper, may lead to different outputs. Therefore the question we tackle in this study is: *to what extent is the output of Voting Aid Applications – that is: the individual voting aid participants get – determined by the specific selection of incorporated statements?*

The data we use here have been used to build the Belgian¹ VAA *Doe De Stemtest* for the general elections in June 2007. *Doe De Stemtest* consisted of 36 statements. To arrive at this final selection, a short-list of 50 statements was included in a survey applied to a random sample of 1,000 Belgian citizens. We use the answers of this sample of Belgian citizens to test whether selecting 36 statements out of the original list of 50 makes a difference. We will show that the range of possible VAA output distributions is substantial: any selection of 36 out of 50 statements yields different results. That is to say, the share of advice to vote for a party differs substantially across the many billions of possible 36-statement configurations.

The paper starts with documenting the spectacular spread of VAAs throughout Europe. Then we review the limited scientific literature about the workings of VAAs. We especially focus on the problem of selecting issues and statements. Next we present our evidence. Then we analyse our data and discuss the results. We finish with a conclusion and discussion section.

Booming Vote Aid Applications across Europe²

Vote Aid Applications have become increasingly popular in a large number of European countries over the last few years. Media companies and

independent agencies have set up popular websites offering citizens information about which party programme is closest to their own preferences. In some countries, VAAs have even been launched by major TV shows giving viewers the chance to participate and to receive their voting advice while watching TV. Both the websites and the TV shows have often had impressive participation rates and viewing figures, which suggests that large numbers of electors have been exposed to them.

To get a raw picture of the spread of the VAA phenomenon, in 2007 we set up a small expert survey among a sample of political scientists from all European countries (via a web survey). We asked them to provide us with some information about the existence of Voting Aid Applications in their country; 38 academics responded, giving us a first impression of the situation in 22 countries. In 15 of the 22 countries there was an operational VAA at the last general election. This is the case in countries as diverse as Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, Hungary, Latvia, Norway, Slovakia, Sweden, Switzerland and the Netherlands.

With a first VAA in use as early as in 1989, the Netherlands was the VAA pioneer. The *Stemwijzer* only reached 500 participants with a print-based version. The numbers radically changed with the rise of the Internet. In 1998 the *Stemwijzer* went online for the first time and several other VAAs followed suit. While in 1998 250,000 Dutch voters asked for voting aid, this figure exploded to 2.6 million users in 2002, that is an astonishing 25 per cent of the Dutch electorate. For the 2003 general elections eight different VAAs were online in the Netherlands. Finland is another early adopter, with the first and still most popular VAA starting as early as in 1995. Four years later, four television channels broadcast TV shows, each launching another VAA.

With the start of the new century, the successful Dutch *Stemwijzer* was exported to several other countries. The German *Wahl-o-mat* and the Swiss *Politarena* are licensed versions of the *Stemwijzer*. In 2002, the German *Wahl-o-mat* was used for the first time, and to date it has attracted more than 10 million users. It was most successful in 2005, when more than 5 million people participated (Marschall and Schmidt 2008). In Switzerland, *Politarena* and *Smartvote* both started in 2003, reaching 600,000 people. Since then more than 20 different vote applications were designed for several local and national elections. Since Switzerland has a so-called 'panachage' system, where voters can vote for candidates on more than one party list, *Smartvote* allows voters to create a list of candidates (of different parties) that are closest to their opinion. Voters can even modify this list, print it out and take it with them when they go out to vote (Ladner *et al.* 2008). Apart from Switzerland and Germany, also Belgium (Flanders) has been inspired by the Dutch example. In 2003, 2004, and 2007 the Belgian public broadcaster VRT launched its *Doe De Stemtest* TV show annex VAA which was used by 840,000 people in 2004 (Walgrave and Van Aelst 2005). Together with the

success of the VAA by the daily *De Standaard*, the number of users amounted to about 1 million in Belgium in 2004. The further growth and spread of the VAA phenomenon seems not to have come to an end yet. In countries where VAAs have been adopted early and appeared to be successful, the original VAAs have been joined by competitors. Also geographically VAAs are further spreading across Europe. In countries such as Sweden, Norway, Slovakia, the Czech Republic and Ireland, VAAs have been launched recently, always with high participation rates. In 2009, the European University Institute launched the EU Profiler, which is a EU-wide VAA for the European elections of June 2009. The EU Profiler was available in all national languages of the EU and was customised to each country's national campaign context. There were 30 country versions, one for every EU member state, and additional versions for Turkey, Switzerland and Croatia. In 2009, many initiatives other were taken by other institutes such as *VoteMatch*, *MonVoteAMoi* and *Politikabine*.

The reasons for VAAs' growing popularity and spread through Europe are manifold and are related to structural political changes. As explaining VAAs' success is not the main object of this paper, we briefly mention just a few. First, the VAA boom is probably due to the international trend of dealignment and rising numbers of floating voters throughout Europe (see for example Dalton and Wattenberg 2000). As voters become more volatile they search for beacons to help them cast their vote. VAAs offer low threshold and ready to use aid. Second, VAAs are compatible with the tendency towards 'issue voting'. Scholars claim that voters' choices may be less than before determined by structural features or party identification but more by changing issues (see for example Aardal and van Wijnen 2005). VAAs provide an answer to that demand and offer voters easily accessible information on parties' issue positions. Third, not only the demand of voters for issue and party information but also the supply by independent agencies and media has increased. As mass media increasingly follow their own logic and have become autonomous players in the campaign, they increasingly offer VAAs to their audience as an extension of their services and as a way to establish themselves as a trustworthy electoral guide (see for example Altheide and Snow 1979; Farrell and Schmitt-Beck 2008). Finally, it is hard to deny that the breakthrough of VAAs is also associated with the spread of the Internet. The simple availability of the technology made the production of VAAs easier and it especially provided the communication infrastructure to reach many voters without much effort.

All these general elements leading to VAAs' spread and popularity apply to most Western political systems to a more or less similar extent. Yet we suspect some specific features of political systems stimulate or hinder the establishment of successful VAAs. First, VAAs do seem to make less sense in two-party systems. The choice set of the electorate in two-party systems is less complicated and parties' positions and voters' identifications are relatively clear (Teepe and Hooghe 2005). Multi-party systems, in contrast,

often have multiple cleavages and voters have less intuitive understanding of what parties stand for; therefore voters need more ‘aid’. This might explain why in the United Kingdom or the United States (or in Ireland), usually trendsetters in campaign practices, VAAs are absent so far. It is no coincidence that VAAs are most popular in countries with a (highly) fragmented party system like the Netherlands. A second reason for the absence of a VAA in some countries may be related to the mass media. VAAs are mostly sponsored by newspapers or television stations. A VAA without media support would have difficulty financing the system and attracting users. So, in countries in which press freedom is limited and state intervention a common feature, such as Russia and Belarus, we would not expect to see VAAs. The same applies to countries with highly partisan media: a VAA sponsored by a partisan newspaper or television channel will fail to attract floating voters who search for a neutral voting aid.

Statement Selection for Voting Aid Applications

As mentioned earlier, VAAs’ spectacular rise stands in sharp contrast to the limited scientific literature on the topic; that is to say: the international, English literature on VAAs is very narrow. We suspect there is some scientific reflection in all countries where VAAs gained popularity, but that local literature is not accessible for us due to language reasons. Our overview below must thus remain confined to the work in English (and Dutch) that we could access. Since this literature is just emerging, a considerable part of this work has not been published but is still in the form of manuscripts and working papers.

Most available (and accessible) work paid attention to the potential *effect* of VAAs on citizens’ voting behaviour (see for example Kleinnijenhuis and Krouwel 2007; Kleinnijenhuis *et al.* 2007; Ladner *et al.* 2008; Laros 2007; Marschall and Schmidt 2008; Van Praag 2007; Walgrave *et al.* 2008a). Some other work has been done about the *reasons* people participate in VAAs (Boogers 2006; Hirzalla and Van Zoonen 2008) and about who the people are that use VAAs (Hooghe and Teepe 2007; Ladner *et al.* 2008; Teepe and Hooghe 2005). But the extant scientific literature has remained largely silent about how VAAs work, about their internal *mechanics* and make-up. The contributions focusing on the internal machinery of VAAs can be counted on the fingers of one hand. Most important are two papers by Kleinnijenhuis and Krouwel (2007, 2008). They do not focus on the issue and statement selection process, though, but rather on the dimensionality of the political space in which voters are associated with political parties and on the added value of using weighted statements. In short, they focus on the internal decision rules of VAAs and their effect on the output. What they call the best ‘Multi Attribute Utility Decision’ (MAUD) model ‘predicts’ a certain vote best (Kleinnijenhuis and Krouwel 2007). It is interesting to see what they consider to be the best models. The best models are those that are

better than other models at predicting a *real past vote* for a party. So, the more voting advice concurs with previous voting behaviour, the better the VAA performs, they contend. Kleinijenhuis and Krouwel rely on aggregate percentage distributions: does the advice given by a VAA following a specific MAUD model result in a distribution of advice that more or less resembles the real electoral strength of the parties? The more a VAA and its internal decision rule manage to generate an election result that approximates to the real election outcome, the better it performs.

That political scientists have barely bothered to examine how VAAs work and how this affects the voting aids they produce is surprising as there are many examples showing that VAA outputs are not consistent but differ across time and across VAAs. Let us give two examples from the Netherlands, the country with the longest VAA tradition. First, Van Praag compared the voting advice given by the Dutch VAA *Stemwijzer* in 2002, 2003, and 2006 (Van Praag 2007: 5). He found dramatic differences in parties' share of voting advice between these three elections. The leftist party SP (Socialist Party) got 12 per cent in 2002, dropped to 8 per cent less than a year later in 2003, and got 15 per cent of the advice to vote for it in 2006. The Christian Democrats (CDA) had an even bumpier ride: 11 per cent in 2002, barely 3 per cent a year later in 2003, and 15 per cent in 2006. The Dutch Labour Party (PvdA) saw its share of voting advice varying between 10 per cent (2006) and 17 per cent (2003) and the Christian Staatkundig Gereformeerde Partij (SGP) between 2 per cent (2002) and 7 per cent (2003). It is hard to believe that, in just four years, the Dutch parties and the Dutch electorate would have changed so dramatically; it is much more likely that the particular configuration of statements in the *Stemwijzer* varied greatly between 2002 and 2006 leading to oscillating results advantaging one party in a first election, another in a second, and yet another one in a third election. It is probable that the real world did not change but rather the *Stemwijzer* changed in an inconsistent way.

Second, there is the comparison of the 'advice' given to a sample of the same citizens by two different Dutch VAAs, *Stemwijzer* and *Kieskompas*, both for the 2006 Dutch elections (Kleinnijenhuis and Krouwel 2007: 4). Differences are large: 13 per cent of the advice given by *Stemwijzer* was in favour of the CDA, 21 per cent from *Kieskompas*; while *Stemwijzer* sent 28 per cent of participants to SP, compared with only 12 per cent from *Kieskompas*; *Stemwijzer* advised 9 per cent of the participants to vote for the Christian Union (CU), compared with 17 per cent from *Kieskompas*. 'Only 43% of the respondents who used both *Kieskompas* and *Stemwijzer* received identical advice' (Kleinnijenhuis and Krouwel 2007: 5). Again the same picture emerges: large differences between the outputs of different VAAs. The point we want to make is simple: VAAs' outcome is not stable but seems to change haphazardly from one year to another and from one VAA to the other.

How is it that VAAs yield such inconsistent results? Diverging statement selection is the most probable culprit as we will show in the next sections. To

make that point we need first to explain how VAAs are generally built. A VAA building process typically consists of several steps. The most crucial step is the selection of the statements that form the heart of the system. VAA builders mostly use different criteria to assess the suitability of statements and to make a selection out of an, in principle, infinite number of possible statements (for a description of this process in several countries see Deschouwer and Nuytemans 2005; Krouwel and Fiers 2008; Laros 2007; Marschall and Schmidt 2008). First, statements should be politically relevant; they should deal with important political topics. Second, statements should be diverse and tackle a large number of different issues. Third, statements should discriminate between parties; they should be able to distinguish one party from another. Fourth, in some cases, parties are given the chance to veto some statements or to negotiate with the VAA designers about statement wording (Van Praag 2007: 5–8). Typically, the statement selection process starts with generating a long list of statements that is then gradually narrowed down to a short-list and then to a final list of statements. In this selection process, the potential outcome – that is the distribution of ‘advice’ over the parties – is not taken systematically into account.

To our knowledge, only a single paper in the scientific literature refers to the crucial process of issue and statement selection for VAAs. Kleinnijenhuis *et al.* explicitly tackle the matter when they assert that some statements in the two most important Dutch VAAs for the 2006 general elections were differentially benefiting left-wing and right-wing parties (Kleinnijenhuis *et al.* 2007: 42–52). They contend that a non-equilibrated ‘left-wing’ or ‘right-wing’ formulation of statements and a disproportional under- or overrepresentation of issues in these VAAs structurally advantaged some Dutch parties at the expense of others. This can be explained by referring to the literature on issue competition and issue ownership (Budge and Farlie 1983; Klingemann *et al.* 1994; Petrocik 1989). Some issues favour certain parties at the expense of others. This is the case because these parties ‘own’ the issue at stake: they have acquired a strong reputation on the issue and their stance on the issue is popular (Walgrave and De Swert 2007). On other issues, the same party may have much more difficulty convincing the electorate. Statement selection for a VAA inevitably implies a selection of issues and thus a mix of favourable and less favourable issues for each party. In the end, it is very unlikely that a certain selection of statements perfectly balances favourable and unfavourable issues for a party and, consequently, the statement selection process almost inevitably leads to an expansion of ‘advice’ in favour of party A while decreasing that for party B. Added to that comes the fact that not only the underlying issues but also the statement wording advantages some parties and disadvantages others. In sum, statement selection (and statement wording) has the potential to substantially affect the output of a VAA and to vary the distribution of ‘advice’ produced regarding the parties.

Data and Methods

To take up these issues and to test whether statement selection makes a difference in terms of party advice output, we carried out a survey among a random sample of 1,000 Belgian citizens.³ Data are weighted on party preference (2004) and socio-demographics. A short-list of 50 potential VAA statements was presented to these 1,000 respondents. The 50 statements had been produced by the builders of the VAA *Doe De Stemtest* in 2007 – political scientists from four Belgian universities – and were equilibrated in terms of issues and direction. The statements had already been responded to by the political parties. They had been tested on students and were unambiguously formulated. The 50 statements tap a wide range of different issues with more important issues, for example welfare or immigration, being covered by more statements than less important issues, for example EU affairs. Here are a few examples of the statements: ‘Also in bars and cafes smoking should be forbidden’; ‘Companies should be forced to hire a certain number of foreign immigrants’; ‘Gay couples should be allowed to adopt children’; ‘High pensions should be taxed more’. In sum, these 50 statements match all the criteria that VAA builders typically use: they are relevant, discriminate between parties, cover a wide range of issue domains, and are accepted by the parties. The survey asked respondents to agree or disagree (or declare themselves neutral) with the statements.

A typical VAA consists of 30+ statements. We decided to test a large number of configurations of 36 statements by running a large number of simulations. Within a total of 50 statements there are 937 billion unique combinations of 36 statements. It is of course impossible to test all these configurations. Therefore, we take a random sample of 500,000 configurations of 36 statements.

We first run simulations of a simple VAA system on the basis of all the random 36-statement configurations with *unweighted* statements. We do not distinguish different dimensions in the statements. We simply calculate distances between parties and respondents: if a respondent agrees with a party on all 36 statements there is a 100 per cent match between them; if a respondent disagrees with a party on every statement there is a 0 per cent match. For each respondent we only take into account their ‘first’ party, that is the party that most closely approximates their own opinions. We consider this as being the ‘voting advice’ that is given by the VAA. We acknowledge that only considering the first party is a fairly strict criterion; one might think about considering the first two or even the first three parties as the ‘advice’ of a VAA. But for the sake of clarity we limit the output of a VAA here to the first party, the party the system calculates to be the closest to a respondent’s preferences. Each simulation consists of ‘pushing’ the 1,000 respondents through the basic VAA – consisting of a random sample of 36 random statements – generating a certain voting advice output. So, each simulation generates what one could call a virtual election result for the 1,000 respondents with each party getting a

share of the votes – that is: a share of the voting advice (first party in the party rank-order). We aggregate all results of all 500,000 randomly sampled simulations into a distribution of advice per party. We then scrutinise these distributions and compare them across parties.

Second, we follow an identical procedure with the same 500,000 random configuration of statements but this time we *weight* the statements resulting in a more realistic simulation of what most VAAs really do. Indeed, most VAAs use some kind of weighting procedure; trying to simulate real voting, some statements get more weight than others. Weighting can be done by letting voters decide themselves what topics or statements are more important or, in contrast, by assessing the emphasis parties put on certain issues and topics in their manifestos. We decided to follow the last track here. All party manifestos of the Flemish parties were entirely coded following the procedure of the Comparative Party Manifesto project in which each (quasi)sentence gets a topic code (Budge *et al.* 2001). The proportional issue scores are then used to weight the potential VAA statements about that issue. If a party in its manifesto devotes a lot of attention to the welfare issue, for example, the welfare statements in the VAA will get more weight for that party; if a respondent agrees with that party on the welfare statements this will boost that party's score in the VAA output this respondent gets. In a nutshell, the weighting procedure we use here consists of an issue-specific weight per party generating a complex system of specific weights per statement and per party. This more complicated VAA system is also tested 500,000 times based on the same 500,000 random configurations of statements. We expect this procedure to generate different results than the simple 'add-up' version of the VAA.

In the analyses below we only take into account the five major Flemish parties or cartels competing in the 2007 general elections. Apart from the ecological party Groen! and the extreme-right Vlaams Belang, the three mainstream parties – socialists, liberals and Christian democrats – entered the electoral arena in a cartel with a smaller party: the CD&V-N-VA (Christian democrats), SP.A-Spirit (socialists) and VLD-Vivant (liberals). Our VAA simulation produces voting advice for each of these parties separately. Yet to be able to put the VAA output into perspective by comparing the VAA outputs with the real election results of 2004 and 2007 – we do not know what share of people voting for the CD&V-N-VA cartel actually voted for the CD&V or for the smaller N-VA, for example – we aggregate the advice for both cartel partners into one cartel advice. This also means that we will not deal with Lijst Dedecker, a newly founded (2007) liberal party that gained more than 6 per cent of the votes, nor with some other smaller parties. Table 1 documents the real electoral strength of the Belgian (Flemish) parties in 2004 and 2007.

In the next section we examine the distribution of advice to vote for a party as produced by 500,000 different VAAs each time consisting of a different configuration of 36 statements. The main operational questions are

TABLE 1
REAL ELECTORAL STRENGTH OF FLEMISH PARTIES IN 2004 AND 2007 (%)

	2004	2007
Groen!	7.6	6.3
CD&V-N-VA	26.1	29.6
SP.A-Spirit	19.7	16.3
Vlaams Belang	24.2	19.0
VLD-Vivant	19.8	18.8
Other parties	2.7	10.0
Total	100.0	100.0

the following: what are the basic parameters of the distribution per party? What is the average score a party gets and how stretched is the distribution? Does the distribution approach normality? What about the real electoral results of 2004 and 2007? In other words: how large is the variation in vote shares per party as produced by the 500,000 36-statement configurations? And what are the differences between unweighted and weighted VAAs?

Results

We focus in the first instance on the simple VAA containing unweighted statements. In the graphs contained in Figure 1, we mark the real electoral strength of a party with a line labelled '2007' on the left side and a line labelled '2004' on the right side. We also mark the output of the actual selection of statements that was in reality used for *Doe De Stemtest* in 2007 on the graphs with a line labelled 'DDST 2007'.⁴

Each graph contains, per party, the distribution of the 'advice' to vote for that party – the party would appear as 'the closest' party if the VAA was based on that particular 36-statement configuration – for all 500,000 simulations. For example, the first graph shows how many of the 36-statement combinations would result in advice to a certain proportion of participants to vote for the party Groen! The average of the distribution is 3.8 per cent. This means that, over all possible 36-statement configurations in our sample, on average 3.8 per cent of the participants would get the advice to vote for the Flemish green party. Comparing that figure with the real election results in 2007 (6.3 per cent) and 2004 (7.6 per cent) shows that a large majority of configurations result in less advice in favour of Groen! than the real election strength of Groen! The histogram also shows the descriptors of the distribution, standard deviation and kurtosis.

The graphs in Figure 1 show that the distribution of vote shares per party is largely normal; this was to be expected according to the Central Limit Theorem (a large number of independent statements will aggregate in a normal distribution). The normality is grasped by the kurtosis statistic. If the kurtosis approaches zero the distribution is Gaussian. For all parties the kurtosis approximates zero, except for Groen! (where it is 7.34). The reason simply is that the distribution of the Flemish green party is heavily skewed due to its

FIGURE 1
VOTING ADVICE FOR EACH PARTY

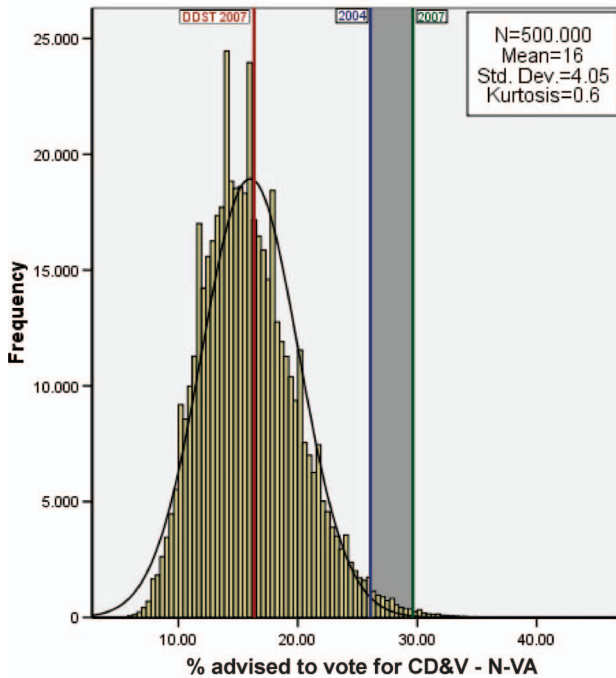
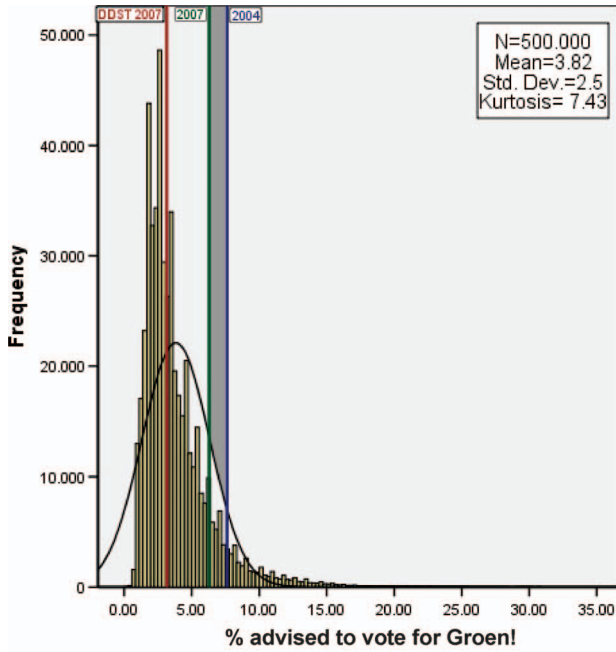


FIGURE 1
(Continued)

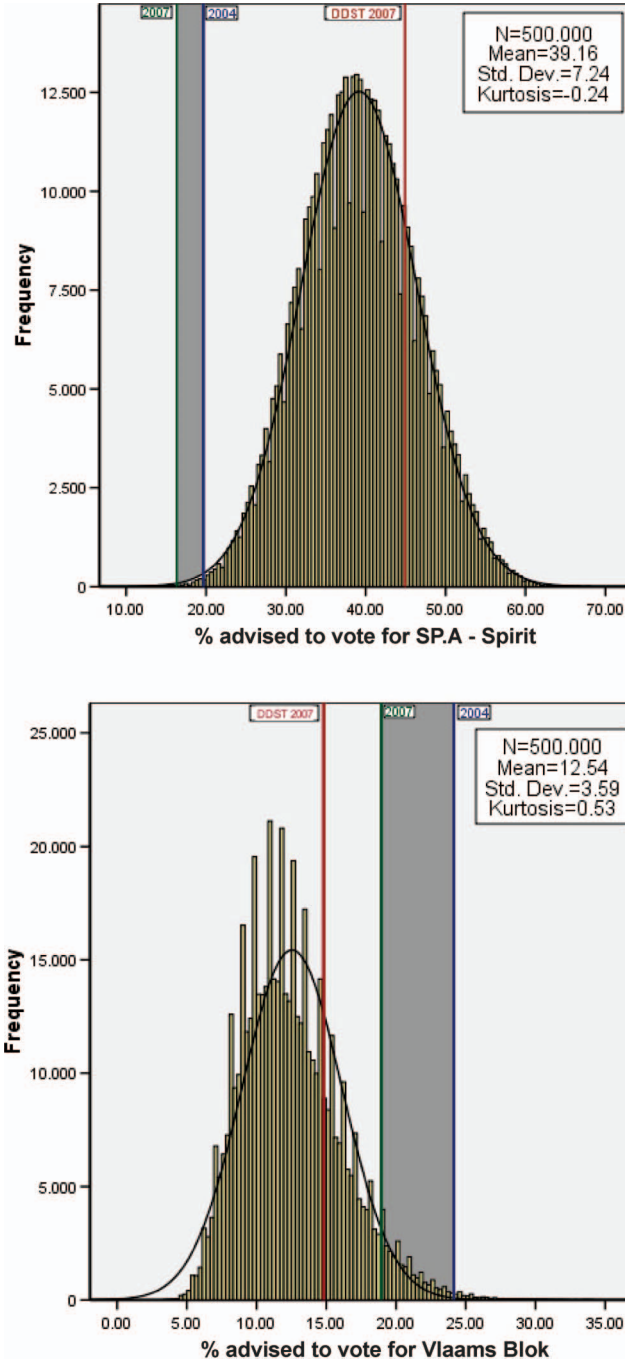
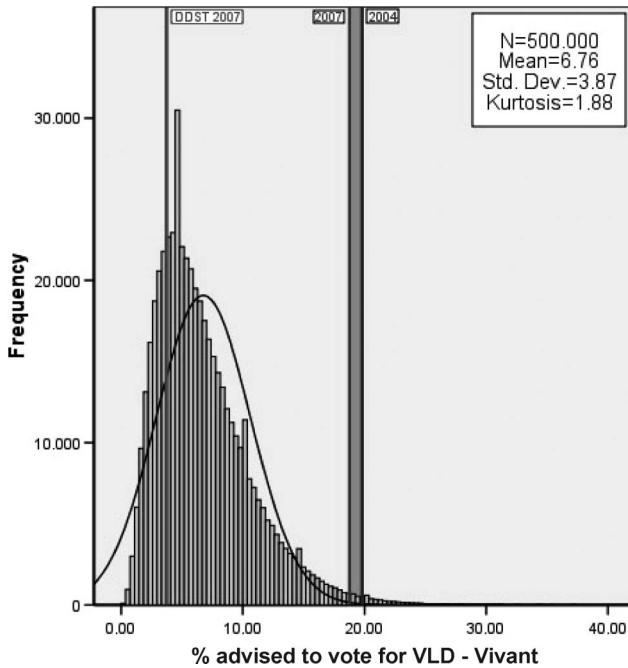


FIGURE 1
(Continued)

average close to zero and the impossibility of having negative values. So, Groen!'s distribution's left tail is cut off leading to a fairly high kurtosis. The right tail of the distribution approaches normality. That all distributions are almost perfectly normally distributed is important: it establishes that for each party there is a central tendency in the 50 statements. The 50 statements tend to produce a voting advice output normally clustered around an average share of voting advice. Of course, 50 other statements would most likely lead to different distributions with a different mean but they would almost certainly be normally distributed too, with an inbuilt dominant tendency to yield a certain party a certain share of the votes.

The most important finding in the graphs is that the spread of the advice around the mean seems, purely statistically speaking, to be relatively narrow: standard deviations are not really large (between 2.5 and 7.2). The distributions seem to be highly peaked with steep slopes and relatively short tails. Only for SP.A-Spirit are outputs more dispersed. This makes sense as there is a strong association between means and standard deviations and as the mean of SP.A-Spirit is by far the highest (39.2 per cent). The statistical dispersion figures reinforce the point made above: there is not only a central tendency in the batch of 50 statements but this central tendency is quite strong. However, in real political terms the distributions point to a large variation in results. For example, some statement configurations yield the

CD&V-N-VA 5 per cent of the advice; in other configurations the party can boast 32 per cent of advice; VLD-Vivant varies between 0.3 per cent and 23 per cent; Vlaams Blok between 4 and 26 per cent; etc. In the real political world, these differences are really substantial. A VAA producing 5 per cent advice to vote for the main party (CD&V-N-VA) and another VAA, based on the same short-list of statements, that yields more than 30 per cent of advice for the same party are simply very different VAAs. The distributional analysis visibly explains how it is possible that different VAAs produce diverging results: the statements incorporated in the system matter and determine the results. The analysis also explains why VAAs have become the object of a fierce political debate in some countries: in political terms, their outputs differ substantially and parties can easily feel handicapped or favoured by specific VAAs. The distribution of advice may be normal and statistically speaking rather narrow, but statement selection can boost or curtail a party's advice.

A secondary finding that reinforces the previous point about the dispersion of advice is that there is a considerable gap between the real election results of 2004 and 2007 and the advice produced by the simulations. The mean voting advice output for none of the parties approaches the real election results. This is shown in Figure 1 by the fact that the real election results are always situated at the far ends of the tails of the distributions. This was of course to be expected to some extent as VAAs are only based on parties' issue positions and as political science has taught us that voters do not vote for parties only on the basis of their stances. Interestingly, differences between parties are substantial. Some parties receive more advice compared to their electoral strength, other parties tend to be seriously underrated. SP.A-Spirit, for example, receives a strikingly higher amount of advice to vote for it than its electoral strength would suggest; parties such as CD&V-N-VA and VLD-Vivant are electorally much stronger than the VAA simulations suggest.

What about the real *Doe De Stemtest* 2007 statement configuration that was used in reality to advise a few hundred thousand Belgian voters at the 2007 elections? The line labelled 'DDST 2007' in the graphs marks the solution really used in 2007, although in the real system weighted statements were used. The actual 2007 configuration is always situated close to the average, sometimes it produces results that are slightly closer to the election results (Groen!, CD&V-N-VA, Vlaams Belang), sometimes the 2007 configuration is further away from the elections than the mean (SP.A-Spirit and VLD-Vivant).

So far we have presented the results of the unweighted version of the simulated VAAs. Do more realistic simulations based on weighted statements lead to different results? We do not show the graphs per party but summarise the basic statistics per party in Table 2.

Weighted VAAs produce results that are equally normally distributed (figures not given in Table 2). The means of the advice for all five major

TABLE 2
WEIGHTED VERSUS UNWEIGHTED SIMULATIONS (N = 500,000); SUMMARY
STATISTICS OF DISTRIBUTIONS

Party	Mean		Standard deviation	
	Unweighted	Weighted	Unweighted	Weighted
Groen!	3.8	3.5	2.5	2.0
CD&V-N-VA	16.0	12.9	4.1	5.1
SP.A-Spirit	39.2	35.6	7.2	8.2
Vlaams Belang	12.5	11.1	3.6	3.7
VLD-Vivant	6.8	7.0	3.9	8.4
Average	15.7	14.0	4.3	5.5

parties slightly decrease; this implies that the smaller parties (not included in Table 2) receive more advice. More importantly, the standard deviations increase from the unweighted to the weighted version of the same VAA. Weighted VAAs lead to flatter distributions with longer tails and larger standard deviations: the average standard deviation goes up from 4.3 in the unweighted to 5.5 in the weighted simulations. This was to be expected. If some statements have more weight for some parties then the chances are high that their presence or absence in the configuration affects the result of this party more and leads to more variation. In sum, the impact of statement selection on the output further increases when statements are weighted.

Conclusion and Discussion

The aim of the study was to test empirically whether the specific statement configuration incorporated in a Vote Aid Application (VAA) makes a difference. Departing from the absence of discussion and debate about VAAs among political scientists, our goal was to start the debate about the make-up of VAAs. To what extent is the output of VAAs – that is, the voting ‘advice’ they produce – affected by the specific statements incorporated in the system? We sought the answer to that question drawing upon a random sample of the Belgian population and on the answers of 1,000 citizens to 50 typical VAA statements, we ran 500,000 simulations of VAAs with diverging 36-statement configurations. We alternatively tested unweighted and weighted VAA configurations. Each time we calculated how many Belgian citizens would be advised to vote for a certain party and we analysed the distribution of advice per party.

We found that statements do indeed matter. There is a central tendency in the statements: there is variation in the distribution of advice but the variation is clustered around a dominant mean. This suggests that an indiscriminate batch of statements has an inbuilt tendency to favour certain parties in contrast to others. Another batch of statements may have an entirely different in-built partisan bias. Although statistically speaking the variation in results seems not too large, in political terms the dispersion of the advice distribution is substantial. The outputs of advice to vote for a

certain party differ across configurations. Some configurations generate hardly any advice to vote for a certain party, other configurations boost advice in favour of a party. Some parties' vote shares more than sextuple between the least and the most favourable statement configuration. The real electoral strength of parties does not seem to be related to the advice produced; distances between the vote advice distributions and real electoral strengths are large. Weighting the statements does not really change the output. The mean of the distributions moves just a little bit but the spread of the output distributions increases. This implies that the effect of the statement selection process even increases when weighting the statements.

It may be the case, of course, that the key finding that statements matter is the result of our particular batch of 50 statements. These 50 statements – they were all used to devise the real *Doe De Stemtest* in Belgium in 2007 – may have had particular characteristics and other statements, and statement configurations, may have produced entirely different results. This possibility cannot be excluded. Yet the list of 50 statements we have worked with here was not just put together haphazardly, they were not randomly or carelessly selected. In contrast, they were carefully chosen by a team of four political scientists; they were balanced across issues; they were formulated in a balanced way trying to avoid bias in favour of left- or right-wing parties; they were agreed upon by the Belgian political parties. In short, the 50 statements were selected according to all criteria that are typically used by VAA builders when choosing VAA statements (see above). So it seems unlikely that another batch of statements would lead to strongly diverging results in terms of the dispersion of advice outputs.

This study has only scratched the surface of an emerging field of research. As VAAs are spreading to more countries and as the participation rates rise further, examining the mechanics of VAAs will gain relevance. Our contribution was modest: we merely showed that statements make a difference. Much remains to be done. We see several avenues for further research. First, we need more evidence of more VAAs in more different political settings. It cannot be excluded that VAAs in less crowded and fragmented, or more polarised, party systems yield other results. It would be especially interesting to see what outputs VAAs yield in two-party systems. Second, we need to go beyond the finding that statement selection matters but need to investigate what VAA statements favour which parties and why. Following the political science literature on issue ownership, we expect that statements about issues that are owned by parties benefit those parties. Also, statement wording needs more attention. Following the literature on questionnaire effects, statements can probably be formulated in a 'right-wing' or a 'left-wing' way and this may determine the VAA outputs for right- and left-wing parties. Another hypothesis could be that parties profit from a unique position and have to gain disproportionately when they stand alone with their position on a statement.

We not only need more research about how VAAs work and how they produce advice but also about the role VAAs play in electoral campaigns. As voter realignment further increases, voters may become more reliant on VAAs to help them make their increasingly difficult choice. Although extant work concluded that VAAs do not matter a lot for most voters, this may change in the future as the electorate becomes more volatile. VAAs may buttress the trend towards dealignment because VAAs explicitly rely on the issue positions of parties only and not on other, probably more stable, elements of party choice like voting habits, party identification, and party ideology. Consequently, VAAs can also reinforce the tendency towards issue voting as they present their participants merely with parties' issue positions and do not take into account either a party's strength or its chances to become part of government. Because VAAs neglect strategic motivations altogether, they may be especially advantageous for small parties and, as a consequence, lead to more fragmented electoral outcomes. Indeed, small parties, in the real world, have difficulties in drawing attention to their policy goals as they are considered to be irrelevant in the electoral struggle. VAAs may help small parties to overcome this strategic handicap by solely drawing voters' attention to what these parties stand for and not to the slim chances that these parties stand to carry out their programme.

Finally, what do our findings mean for VAAs and for the political scientists who are often strongly engaged in building them? Are VAAs by definition unreliable, just an entertaining game that does not inform the voter about the match of their preferences with the parties' offer? Our results show that statement selection is the crux of the VAA-building exercise and that it should be undertaken with the greatest possible care; statements are too important to be selected carelessly. The care with which political scientists design their scientific surveys stands in sharp contrast to the carelessness with which some of them engage in devising VAAs. As VAAs may have real-world consequences one might expect rather the opposite to be the case. VAA-builders should be aware of these statement effects. Acting as if statements are just statements and as if all selections would inevitably lead to the same or similar advice is unwise.

Notes

1. *Doe De Stemtest 2007* was not a real Belgian VAA. It only targeted the Dutch-speaking part of the Belgian population living in Flanders (North) and forming 60% of the Belgian population.
2. This section draws on Walgrave *et al.* (2008).
3. The computer assisted telephone survey (CATI) was carried out by TNS-Media on a random sample of 1,000 18+ year old Dutch speaking Belgians between 10 and 20 April 2007. The survey was ordered by a consortium of four universities: University of Antwerp (Stefaan Walgrave), Free University Brussels (Kris Deschouwer), Catholic University Leuven (Marc Hooghe) and University of Ghent (Carl Devos). We thank these colleagues for letting us use these data. The survey was used to benchmark the 2007 version of the VAA *Doe De Stemtest* that was aired by the public broadcaster VRT in May.

4. *Doe De Stemtest* worked with *weighted* statements based on the party manifestos and on people's preferences. In the statement selection process the weight of the statements played a decisive role. So, what we indicate in the graphs in Figure 1 is the output of the *Doe De Stemtest* statement configuration if the statements had not been weighted, which was not the case.

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