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ELECTORAL DIORAMAS: ON THE PROBLEM OF REPRESENTATION IN VOTING ADVICE APPLICATIONS

Thomas Fossen and Bert van den Brink

Voting Advice Applications (VAAs) are online tools designed to help citizens decide how to vote. They typically offer their users a representation of what is at stake in an election by matching user preferences on issues with those of parties or candidates. While the use of VAAs has boomed in recent years in both established and new democracies, this new phenomenon in the electoral landscape has received little attention from political theorists. The current academic debate is focused on epistemic *aspects of the question how a VAA can adequately represent electoral politics. We argue that* conceptual *and* normative *presuppositions at play in the background of the tool are at least as important. Even a well-developed VAA does not simply reflect what is at stake in the election by neutrally passing along information. Rather, it structures political information in a way that is informed by the developers' presuppositions. Yet, these presuppositions remain hidden if we interpret the tool as a* mirror *that offers the user a reflection of him/herself situated within the political landscape. VAAs should therefore be understood as* electoral dioramas*, staged according to a contestable picture of politics.*

1. Introduction

The use of 'Voting Advice Applications' (VAAs) is booming in electoral democracies throughout the world. These online tools aim to help citizens decide how to vote. Examples are the international *Vote Compass*, the Dutch *StemWijzer*, the German *Wahl-o-Mat*, the Swiss *Smartvote* and the *EU Profiler*. In nearly all European countries one or more VAAs are active around election time, and versions have been developed for new electoral systems such as Egypt and Tunisia. In Finland, the Netherlands and Switzerland, where they have so far been the most popular, 20–40% of the electorate have used one or another VAA in recent elections (Garzia and Marschall 2012). VAAs try to help users cast their ballot more competently than they would do otherwise, without overtaxing their time, attention and cognitive abilities. They generally do so by mapping the preferences of users onto the policy positions of parties participating in an election, reducing the costs of obtaining and analysing political information (Garzia 2010). In other words, VAAs function as a *matchmaker* between parties or candidates and the electorate (Fossen and Anderson 2014; Wagner and Ruusuvirta 2012). At first sight, this 'matching model' generates a win–win situation: experts involved in VAA design leverage the voting competence of users, thereby improving the quality of the electoral process.

Can VAAs deliver on this promise? The increasing prominence of VAAs in the electoral landscape has brought them under the scrutiny of political scientists. There is a burgeoning

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literature that focuses on empirical effects that VAAs have on the behaviour of voters, on the one hand (Gemenis and Rosema 2014; Marschall and Schmidt 2010; Walgrave et al. 2008; Wall et al. 2014), and on methodological concerns about their design on the other (Gemenis 2013; Louwerse and Rosema 2014; Walgrave et al. 2009).[1] Yet an assessment of the contribution that VAAs make to democracy also crucially depends on normative and conceptual issues, and these have received less attention so far (Anderson and Fossen 2014; Fossen and Anderson 2014). In this paper, we approach VAAs from a philosophical perspective, with the aim of illuminating these tools not in terms of their behavioural effects, but in terms of the meanings they generate and propagate. More specifically, we ask: *how should we interpret the role of VAAs in the electoral process and what is the status of their advice?*[2]

To get a handle on these questions, we start out by articulating a problem that any VAA that tries to enhance voter competence will have to address: what we call the *problem of representation*. We use the concept of representation here *not* to refer to the relation of some political actors standing or acting for others (e.g., the elected and the electorate). Democratic politics does not just involve the representation of the people by their rulers, but also the representation of the rulers to the people.[3] We are concerned here with the representation that VAAs offer of certain aspects of the electoral process to the user. In order to do their work, VAAs must reduce the complex reality of electoral politics to manageable proportions and present this to the user in an easily accessible and understandable way. They present the user with a picture, or a *representation*, of the electoral landscape. As we will explain, the problem of representation for VAAs, in its most general form, concerns the proper relation between the representation offered by the VAA and the reality of a political election. What are the relevant aspects of the election that a VAA should capture, and how can this be done in a way that gives voters a good grip on what the election is about?

Focusing on this central issue enables us to articulate two competing interpretations of the role of VAAs in the electoral process, according to two different ways of understanding and addressing the problem of representation. On the first view, the application offers the user, as it were, a *look in the mirror*, in which she sees a *reflection* of him/herself as situated within the political landscape. The basic idea behind this picture is that the tool enhances the user's competence to vote by matching her preferences with objective information about what is on offer in the election. On this interpretation, the normative force of the outcome of the application, for a user, derives solely from her *own* preferences. The tool itself remains normatively neutral: it merely provides information, like a clear and undistorted mirror. The problem of representation appears here as an essentially epistemological problem: how to give users correct information about what is at stake. It can in principle be resolved, provided bias is avoided and methodological problems are satisfactorily addressed.

On the second interpretation, VAAs are not mirrors of electoral politics, but *dioramas*, like, for instance, a three-dimensional historical miniature or a shoebox theatre. From this perspective, a VAA does not offer a *reflection* but a *constructed representation* of one aspect of what is at stake in an election. The crucial contrast with a mirror is that everything in a diorama is *staged* according to the presenter's narrative or artistic vision, whereas a mirror simply reflects a structure that is already found in the world. In a VAA, this comes out in the fact that elements in the 'foreground' of the tool—the user's policy preferences, parties' positions, and so on—only belong together against the backdrop of a specific interpretation of the electoral process and the significance of the act of voting. This 'picture of politics' in the background, as we will call it, tends to remain implicit in most VAAs, but it structures the political information through and through. The crucial implication of this interpretation is that VAAs do,

implicitly, take a political stance: they adopt and propagate a fairly specific and contestable view of what an election is *about*. The normative force of the tool therefore does not derive solely from the user's policy preferences. It depends also on a normatively laden picture of politics as about the aggregation of policy preferences. The problem of representation now appears not as a merely epistemic, but a *political* issue, in which the meaning of the act of voting and the legitimacy of the electoral process are at stake.

By analysing two ways of framing the results of VAAs, we show that VAA construction inevitably brings in political presuppositions on the part of developers. Such political choices are easy to see if we understand a VAA as a diorama, but they tend to remain hidden if we see it as a mirror. The upshot of this argument is that conceptual and normative aspects of VAAs deserve more scrutiny than they are currently receiving. Moreover, we suggest that to treat the VAA as mirroring what is at stake in the election potentially threatens to undercut its aim of enhancing voting competence. To interpret the VAA as a mirror is to treat the problem of representation as an issue of measurement, rather than political judgement. If users cannot see the contestable picture of politics presented in the VAA *as* a contestable representation of politics, then they are out of tune, in this sense, with politics. And that, of course, cannot be understood as a gain in citizen competence.

2. Introducing VAAs: Foreground and Background

To begin, let us explain what VAAs do in a bit more detail, and introduce our notions of their foreground and background. Generally, VAAs aim to address problems that stem from the complexity of contemporary electoral politics and the dynamics of media-driven election campaigns.[4] It is difficult for voters to cut through the overflow of (dis)information and see what is really at stake (De Graaf and Scheltens 2011). As the real differences between parties become unclear to citizens, so do the reasons for voting in the first place. By becoming more informed about actual party positions, voters might also become more inclined to go out and vote (Fivaz and Nadig 2010; Marschall 2008; Marschall and Schmidt 2010). Prominent VAAs such as Smartvote, Wahl-O-Mat, Vote Compass and StemWijzer therefore try to help users vote by matching their preferences on policy issues to party positions encoded in the tool.

While there are a large variety of different VAA implementations, the typical set-up of current VAAs is simple. An opening screen invites users in by soliciting them to test their preferences or promising to find out their position in the political landscape. If persuaded to use the tool, the user is presented with a series of statements about policy issues at stake in the election and asked for a response. Finally, the outcome of the test is presented, which ranks the parties in terms of their distance from or agreement with the user and indicates the closest match. Often, the VAA offers the users options to customise and analyse the output, for example by selecting issues or themes that they deem important, or by including or excluding parties or candidates (Figures 1–3).

So on the face of it, what the VAA does is straightforward: it matches the user's preferences on a set of issues to the positions of parties or candidates on those issues, which are encoded in the tool. The application aims to be a platform that brings together voters' preferences and the policy positions of political parties about the crucial issues at stake. But we need to unpack what goes on here a bit more. It helps to distinguish between the *foreground* and *background* of the tool.

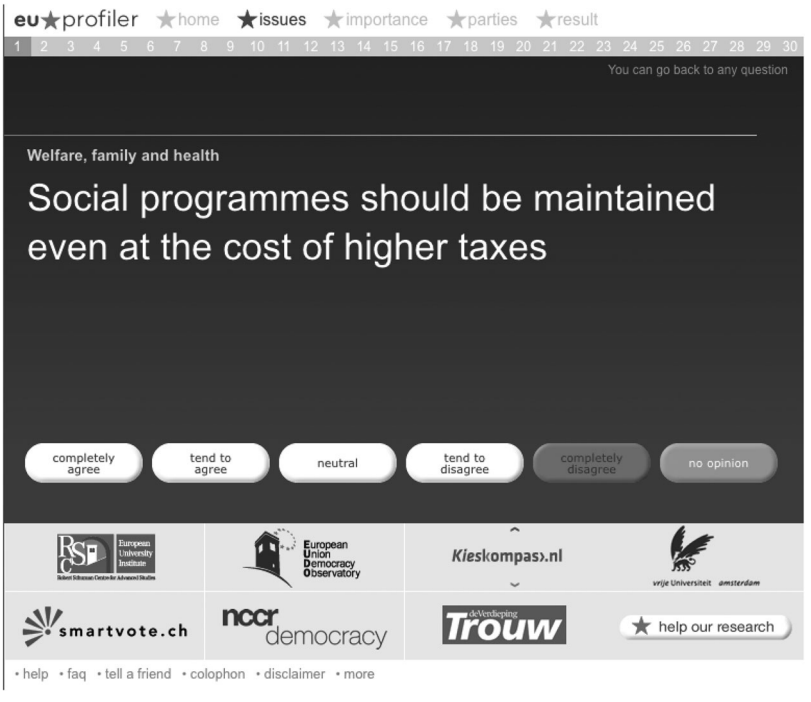

FIGURE 1
Statement screen from EU Profiler 2009
Source: EU Profiler screenshot courtesy of Vote Compass. Reproduced with permission.

In the foreground, we find elements that are immediately present and visible in the tool, such as the set of statements; the user's responses; the responses of political parties; and the result, either in terms of levels of (dis)agreement or a 'political landscape' in which user and parties are positioned with respect to each other (see Figures 2 and 3). These elements hang together in a particular way, structured by the way in which the VAA is constructed and presented, and they refer to elements in the electoral reality. Three elements are crucial. First, users' choices from the response categories are supposed to capture their policy preferences as voters. Second, the positions of parties (or candidates) encoded in the tool are supposed to capture their policy proposals on issues. Third, the set of statements is supposed to capture the salient issues at stake in the election or the underlying dimensions of ideological competition. Under the hood, these three crucial elements are combined by an algorithm that calculates a result or voting advice—including a 'best match' and runners-up.

The elements of the VAA encountered in the foreground belong together on the basis of certain presuppositions about the point of the election and the importance of casting one's ballot. These basic presuppositions about the electoral process and the user as a voter constitute the VAA's conceptual background. The conceptual background of a VAA includes what we will call a specific 'picture of politics', that is, a broad view of what an election is and what it is about (Van den Brink 2012). As is frequently noted, VAAs are often set up to help users with issue voting, as is apparent from the central role of issue statements in the tool (Fossen and Anderson 2014; Garzia and Marschall 2012; Wagner and Ruusuvirta 2012). In some cases,

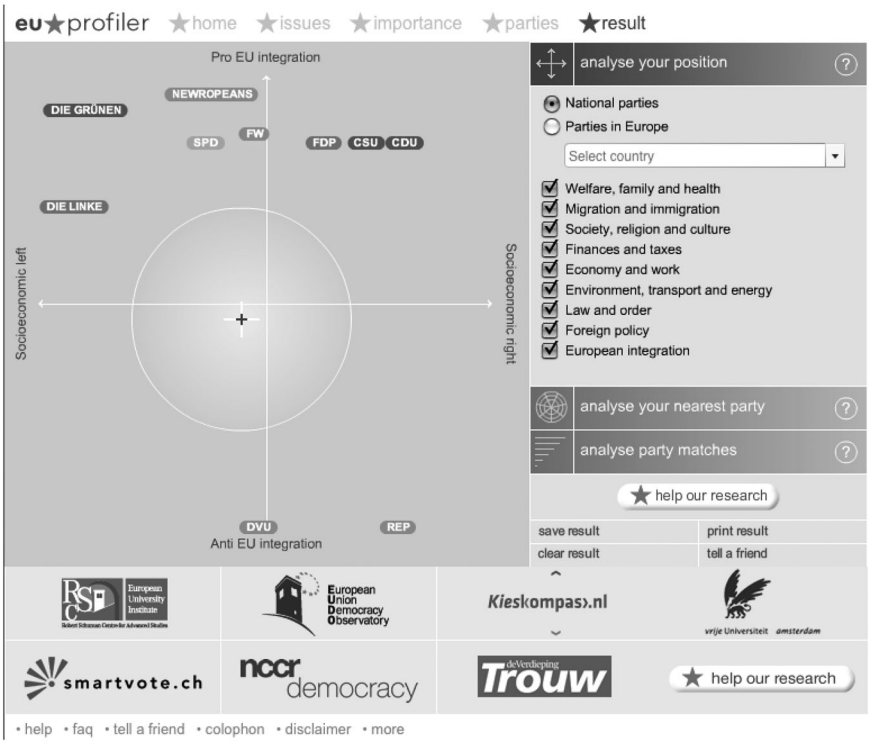

FIGURE 2
Result screen from EU Profiler 2009 (German parties).
Source: EU Profiler screenshot courtesy of Vote Compass. Reproduced with permission.

the issues are taken as indicators of underlying ideological dimensions that structure the political arena (Otjes and Louwerse 2014). Either way, the VAA typically expects citizens to have fairly clear and stable policy preferences, which it asks them to express. What they lack is sufficient knowledge of the policy programmes of political parties or candidates running in an election. So parties and candidates are seen as bearers of competing policy programmes, striving to realise these through competitive elections; voters are construed as vats of policy preferences to be tapped. In the light of this picture, what is ultimately at stake in the election is *the transformation of preferences into policy outcomes*.

Recently, Fossen and Anderson (2014) have shown that this picture of politics is contested in democratic theory. It fits neatly with the normative model of democracy offered by the social choice approach, in which the electoral process is essentially a method of aggregating given preferences, in order that public policy can reflect them as closely as possible (e.g., Elster 1997; Golder and Stramski 2010). But alternative theories of democracy offer quite different views of the electoral process. Deliberative democrats, for example, typically hold that the democratic process is primarily about transforming preferences, rather than just aggregating them (Bohman and Rehg 1997; Goodin 2008). In their view, individual preferences are a suitable guide to policy- and lawmaking only if they are rational or well considered. Whereas Fossen and Anderson have focused on making explicit the normative presuppositions of VAAs and contrasting them with alternative perspectives from democratic theory, our aim in the present paper is to think through the implications of the presence of this background

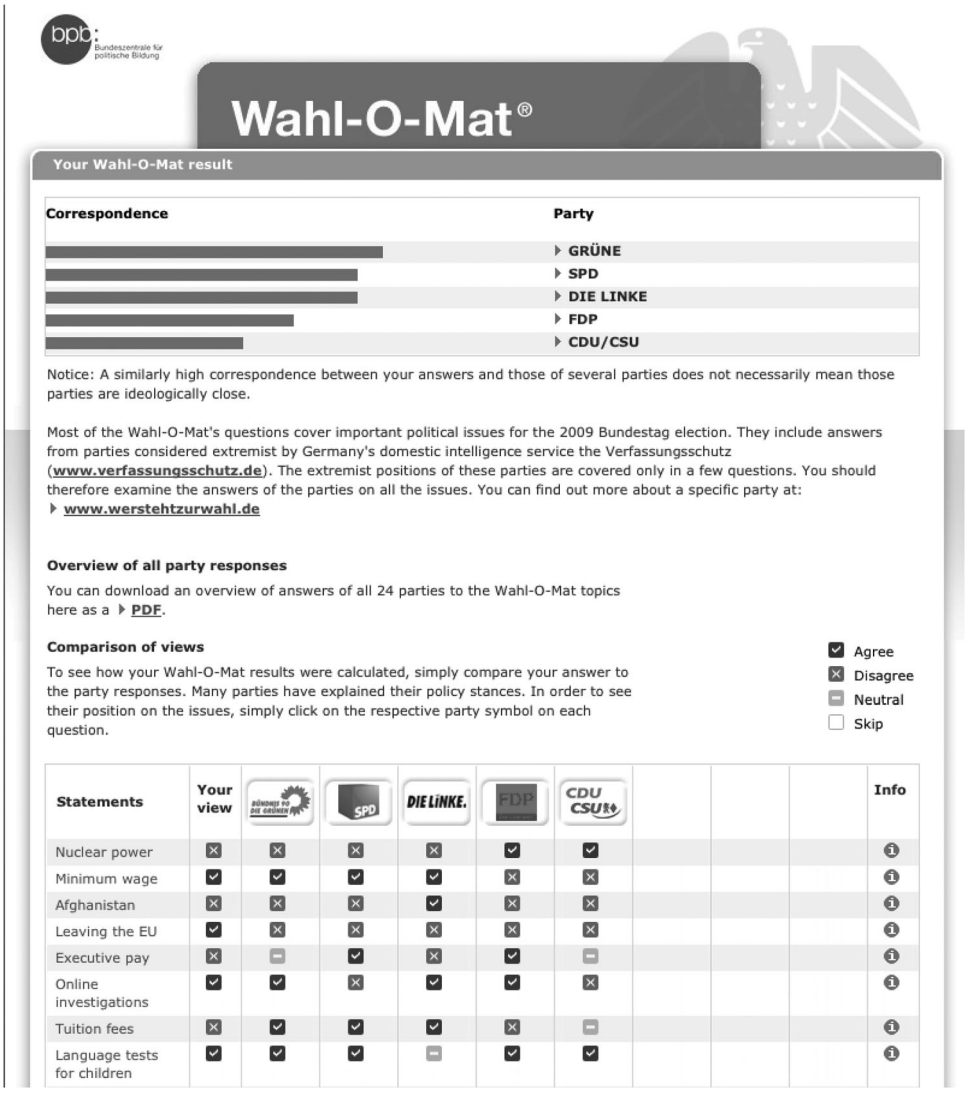

FIGURE 3
Result screen from Wahl-O-Mat 2009.
Source: Screenshot courtesy of www.wahl-o-mat.de. Reproduced with permission.

picture for how we should understand the relation between the information presented in the VAA and political reality.

3. The Problem of Representation in VAAs: Mirrors or Dioramas?

Since VAAs claim to help users function better in the real world of an election, a VAA clearly purports to be an adequate representation of the actual reality of electoral politics. If the VAA is to achieve this, the 'picture' it paints and the information it provides must correspond accurately, to some extent, with real politics. Yet, at the same time, the representation should not be too much like reality in all its aspects, otherwise it would reproduce the

problems the VAA is trying to address (complexity, information overload, etc.). In short, in order to be a successful tool the VAA must aim to offer an adequate representation of the reality of electoral politics under a certain aspect, to the exclusion of other aspects.

This representational character of VAAs raises an important question concerning the relation between the VAA's picture and the reality of electoral politics—what we will call the *problem of representation*: What are the relevant aspects of politics that a VAA should capture, and how can this be done adequately, in a way that makes it as good as real? In other words, how should we understand the connection between the real world of an election, and the representation of it in a VAA? The way in which this question is addressed is crucial for an assessment of whether and how VAAs can enhance their users' grip on an election. And it is precisely at this point that the difference between our interpretations of a VAA as either a mirror or diorama becomes salient.

Let us approach the question first from an epistemological perspective, which focuses on the relation between knowledge claims and the world. Traditionally, this relation has been understood in terms of *correspondence* between knowledge and the facts, a view which Richard Rorty famously captured with the image of a 'mirror of nature' (Rorty 1979). From an epistemological point of view, the crux of the problem of representation in VAAs is whether and how the information presented to the user can correspond to reality. So, the salient questions about VAAs are how to accurately capture the preferences of users and the positions of parties, and how to match these in an unbiased way. How can a careful selection of issues and formulation of statements be achieved, while remaining neutral with respect to parties? (Van Camp et al. 2014) How should user preferences be measured? (Baka et al. 2012) How can party positions on these issues be coded in a way that reflects what the party really stands for? (Gemenis 2013; Trechsel and Mair 2011; Wagner and Ruusuvirta 2012) How can the result or voting advice be calculated in a fair and unbiased way? (Louwerse and Rosema 2014; Mendez 2012a) And what is the best way to present the results? (Louwerse and Rosema 2014; Otjes and Louwerse 2014)

These kinds of epistemological and methodological questions are important and will arise for any VAA. Now, suppose for the moment that we can satisfactorily address these concerns. Would that constitute a resolution of the problem of representation? Would we then have a fully satisfactory answer to the question of how a VAA's picture of politics relates to the stubborn reality of an election campaign? If we understand the problem in terms of correspondence to reality, it seems that it would.

But the image of a VAA as a mirror of electoral politics has its limitations. Sensible though the epistemic concerns about VAAs are, treating them as exhausting the problem of representation in this sense is problematic. It addresses the problem of representation only at the level of what we have called the foreground of the device, by explaining how statements can reflect issues in the election, how user preferences are more or less accurately captured, how party positions are encoded, etc. But this leaves the background picture of politics unquestioned. The underlying picture of politics as policy-making and electoral politics as match-making between voters' preferences and policy proposals is not thematised *as* just one possible picture of what politics is about—and hence taken for granted. The image of the VAA as a mirror prevents us from seeing that this conceptual background is in play at all, because it suggests that the relation of the information presented in the tool to reality is simply one of correspondence.

It is clear, then, that the epistemological interpretation of the problem of representation is incomplete. It needs to be supplemented with a *political* interpretation of the problem of

representation, which brings out the contested character of the political presuppositions that underlie VAAs. We propose, therefore, to replace the image of the VAA as a mirror with that of a *diorama*, such as a three-dimensional historical miniature or a shoebox theatre. This interpretation brings into view the stage setting that goes on in the background, which structures the foreground elements of the presentation. Anyone who sees a reconstruction of a famous battle, for example, will easily recognise that what is presented is not straightforwardly a reflection of what happened, but depends on the presenter's take on the event.

The implication of this view is that even the best answers to epistemic and methodological issues in VAA construction would not constitute a full resolution of the problem of representation. Epistemological concerns have their place, of course. But the expert's job is not simply to perfect the optical properties of the instrument and perhaps direct the angle of view, as if holding up a mirror. Rather, the developer takes a more active part in structuring the contents of the image, by propagating a specific interpretation of the electoral landscape. Below, we argue this point in more detail by analysing two different ways of presenting the results of a VAA. But first, it is worth considering briefly how these interpretations come up in the debate.

4. Mirrors and Dioramas in the Current Debate

Our main aim is to make explicit the epistemological and the political view of representation in VAAs as *possible* interpretations for further discussion, thereby extending our analytical toolkit for understanding these devices. For this purpose it is less important to attribute these views to anyone in particular. It is not always clear which view developers and researchers hold since these issues are not usually explicitly discussed. Still, there are reasons for thinking that both are to some extent implicitly at work in the debate.

First, the epistemic view of the problem is implicit in claims to objectivity made by some VAAs, such as the EU Profiler (like various implementations of Vote Compass), which claims to give users 'an unobstructed view of the European political landscape, and their place within it' (EU Profiler 2009: 4). This is clear also in how it presents the user with its results: 'This is your place in the political landscape.' Such a framing of the results evokes a view of the VAA as an optical instrument that matches subjective preferences of the user with normatively neutral, objective information. Similar claims can be found in VAA research. For example, the optical metaphor comes up explicitly in a recent article that describes the tools as offering 'a look into the mirror' which 'reveals to the user the structure of party competition in light of her own preferences' (Dinas et al. 2014: 291).

Second, this epistemic interpretation of the problem fits well with the strongly methodological focus of much of the academic debate, which aims at improving the accuracy of the match provided by VAAs. For example, in a discussion of whether political scientists should be held accountable for VAAs, Ladner et al. (2010) argue for the importance of standards of quality and transparency in VAAs. They acknowledge that there is no uniquely correct way of setting up a VAA, and that users should therefore have a choice among multiple VAAs with different set-ups. Their discussion focuses on the dangers of insufficient scientific quality, as well as bias and intentional manipulation (ibid., 117, 118). These points are clearly important. But they do not address the conceptual and normative presuppositions of VAAs. Indeed, they suggest that the output of VAAs that meet basic scientific standards could be directly linked to electronic ballot boxes (ibid., 123). This gives the impression that the basic

choices involved in VAA design—and hence the responsibilities of developers—are merely epistemic, not political.

On the other hand, however, VAA developers are typically self-consciously modest in their claims. Some argue, for instance, that a VAA should shy away from presenting a voting 'advice' or 'recommendation' (for instance, Wahl-O-Mat 2009 and Vote Compass).[5] More to the point, some developers stress the necessarily limited character of their tool, making explicit that it leaves out potentially pertinent aspects. For instance, the makers of the Belgian 'Do the Vote Test' argue:

> VAA designers make inevitably subjective choices leading to different results. [. . .] The 'advice' to vote for a certain party should therefore better be interpreted as a party profile (consisting out of *several* parties on top of a list) based on *a certain (important) aspect* of a voter's world. (Nuytemans et al. 2010: 142 emphasis added)

In a similar vein, a developer of 'Choose4Greece' states:

> Our aim is to try to convey to the user, at least subtly, that there is no 'single' scientific result. But more crucial even than this is the fact that voters are motivated by very different concerns that cannot, by definition, be captured by a matching algorithm. [. . .] But the experience [of using the tool] may provide that user with an alternative glimpse of the policy landscape—one that goes beyond the simple soundbites that are peddled by the mainstream media. (Mendez 2012b)

One could go one step further and add that voters may not only as a matter of fact have different motivations than those captured by the VAA; more strongly, they might have good reasons for taking into consideration aspects that are not included in the tool. Still, these remarks convey a sense of the specificity and the limits of the picture of politics presented by VAAs, acknowledging that political presuppositions come into play in the focus on policy issues and the selection of statements. Still, so far, relatively little attention has been paid to articulating, criticising and justifying the picture of politics in the light of which this aspect looks so important.

5. Staging Electoral Dioramas: What is at Stake in an Election?

To make this point more concrete, in this section we take a closer look at a critical aspect of how electoral dioramas are staged: the presentation of the results. We will discuss two different ways of framing the results: a list of levels of agreement between the user and parties on a set of issues, and a low-dimensional spatial model of politics. Typically VAAs use at least one of these two ways of framing their output, though some combine multiple modes of presentation.[6] The choice between these ways of structuring and presenting information is an important step in staging the electoral diorama, because it affects the meaning of the result. Our concern in this section is to show that for both approaches, addressing the problem of representation involves political judgement rather than just measurement, and hence, a contestable stance within the political landscape on the part of the developers.[7] So irrespective of the way in which the results are presented, the VAA should be seen as a diorama rather than a mirror of the political landscape.

If you compare the result screens of EU Profiler and Wahl-O-Mat in Figures 2 and 3, you will see that the latter provides a list of parties ranked according to a count of the number of (dis)agreements with the user. The former presents a quite different picture, in which parties

and user are situated within a two-dimensional space. The difference affects not only the visual presentation of the result, but also the underlying methods of calculation.[8] More important, for our purposes, is that there is a significant *conceptual* difference between the claim that a VAA makes by using a low-dimensional spatial model or a list approach. In both cases, the VAA aims to match voters and parties by providing information on policy positions, but the information provided is of a different nature. A list of levels of agreement only compares standpoints on a given set of issues; the claim made here is that you agree or disagree with particular parties on X number of issues from the set. In contrast, spatial representations purport to reveal something 'deeper' than just a number of issues on which user and parties agree or disagree. When the responses to statements are scaled on a set of dimensions and represented in a unified space, the tool aims to reveal something underlying users' immediate preferences on issues, namely positions on ideological dimensions which structure these preferences (Benoit and Laver 2006). A spatial model thus claims to reveal the deeper dimensional structure of political space, whereas a list merely reveals levels of agreement on a limited set of issues.

Our point is easiest to see in the case of list-based VAAs. As we mentioned, these lists represent levels of (dis)agreement between the user and parties or candidates on a set of statements. The selection of issues and formulation of statements are crucial in constructing the VAA. If it is to be of help to the user at all in deciding how to vote, then, clearly, these statements are supposed to bear on the election: they must represent adequately at least an aspect of what is at stake. Moreover, insofar as the output ranking of parties or candidates is supposed to count as a voting advice or 'best match' for the user, this claim is even stronger: the set of issues then is supposed to represent adequately what is most important or even essential in the election. So the problem of representation can be articulated here by posing three questions. First, what justifies the claim that what is at stake are *issues*, rather than other considerations (such as leadership quality, political style, past performance, etc.)? Second, why is *this* particular set of issues representative of the issues at stake, rather than some other set? And third, how can responses to simple statements adequately represent positions on complex issues?

It should now be quite clear that the problem cannot be seen as merely epistemological. The third question seems most apt for a methodological solution, and indeed developers and critics pay a lot of attention to the formulation and framing of statements and responses (though the extent to which they succeed remains a topic of discussion). The selection of issues also receives particular care from developers, because it is clear that there is potential for steering effects and bias here. Including or excluding an issue that is important to a particular party, and framing it one way or another, is likely to affect the number of favourable recommendations the VAA generates for that party. Developers therefore typically make an effort to find a balanced and carefully formulated set of statements that differentiates between the parties on offer without biasing the result toward some of them. And they often offer users the option of tweaking the results by adding 'weights' to issues they find important or discarding those they do not (it is after all the user's preferences, not the expert's, that are allowed to inform the result). This is like enabling the viewer to influence the presentation in a shoebox theatre by adjusting sliders sticking from the sides of the box.

Still, there are two reasons for thinking that the problem of representation on this point cannot be fully resolved. First, recent research shows that the effects of statement selection on the outcome of the tool are considerable and systematic (Lefevere and Walgrave 2014; Walgrave et al. 2009). It seems therefore that no completely neutral or objective selection is possible.

Second, even if a set of statements could be made to 'reflect' certain issues accurately and without biasing one party over another, the question remains: reflecting *what*? The set of issues is supposed to represent what is at stake in public debate or the electoral campaign. But the question of what is at stake is itself a political question and subject to political contestation. This was vividly brought out by the 'stemijzer' VAA developed by an anarchist collective to counter StemWijzer in the Dutch national elections of 2006, which tried to put issues on the agenda that were not addressed in mainstream VAAs, such as NATO membership and free public transport (Indymedia NL 2006). ('Stemijzer' roughly translates as 'voting crowbar' and is a play on 'StemWijzer', which means both 'voting guide' and an exhortation to 'vote more wisely!') In short, which issues are representative of what is at stake in an election is at least in part a normative question, and developers inevitably take stances on this point.

The problem goes even deeper if we take the first question into consideration: what justifies the nearly exclusive focus on policy issues in this kind of matching VAA, to the exclusion of other aspects? The claim that the election is about issues is a normative claim, one that (as we have said before) makes sense in the light of a specific, but contestable picture of politics as about transforming preferences into policies, to the exclusion of other aspects.

When a VAA uses a low-dimensional spatial model of politics, a similar point holds, although here the issue is a bit more complex. Spatial metaphors are ubiquitous in politics, for instance in the familiar left–right distinction. Spatial models of politics are a way of representing the relative positions of political actors on underlying conceptual dimensions, providing a map of political space (Benoit and Laver 2012). Differences in position represent differences in ideology that supposedly underlie observed policy preferences. Such models are widely used in political science in order to systematically describe and explain political phenomena, in particular voting behaviour and party competition (Benoit and Laver 2006; Schofield 2008). The use of such models in VAAs can therefore appear to be an application of political scientists' expertise for practical purposes—and it is presented as such, for instance, by Vote Compass.

Because the use of these tools is familiar from political science, it is particularly tempting to interpret VAAs that use them as mirrors of electoral reality rather than dioramas, and the problem of representation as an epistemic rather than a political problem. The tool purports to simply reflect the landscape and the user as they are: 'This is your position in the political landscape' (EU Profiler 2009). From the way it presents itself, it does not seem that there is an active role for the tool itself in structuring or (co-)constituting this landscape. Yet this interpretation is misleading, because it hides from view the way in which these representations are structured by political presuppositions in the background.

Concerning the use of spatial models in a VAA, the problem of representation shows up in the following form: What is the number and content of the salient axes of political contestation in an election? How many dimensions are needed to adequately represent what is at stake in an election; how should they be understood; and how do specific issues fit on these dimensions? Choices the developers make on these points clearly affect the structure of the political landscape presented to the user.

For political scientists, who typically use spatial models to describe or explain a particular aspect of electoral politics, the adequacy of a dimensional representation is normally understood in terms of correspondence with the data.[9] A particular spatial model is warranted insofar as it mirrors the dimensions of electoral competition in a particular election, that is, insofar as it accurately corresponds to what is at stake in the election, understood in terms of the observed behaviour of the actors.[10]

However, for the purposes of a VAA, the use of a particular spatial model cannot be sufficiently justified just by pointing to its correspondence to observed behaviour. (And by the same token, *pace* Otjes and Louwerse (2014), the lack of such correspondence does not by itself constitute a compelling criticism of a VAA.) The reason is that a disengaged scientist and a political advisor have quite different roles. Correspondingly, there is an important difference between the function of a spatial model in a VAA and in a scientific analysis. When used for descriptive or explanatory purposes, the model does not aim to help individuals take a stance *within* the political space that it describes. It is constructed strictly from an observer's third-person perspective. In contrast, a VAA is intended to help users situate themselves within the space it presents. The developer thereby addresses the user, adopting a second-personal standpoint toward him or her as a voter. This shift in posture is often overlooked, but it is important because the question of what an election is about (the dimensionality of political space), when interpreted for purposes of practical decision-making, is essentially a normative, political question ('It's the economy, stupid!'). If that is the case, then representing the landscape to voters in one way or another in a VAA constitutes a political intervention. (On the contested character of the configuration of political space, see Rovny and Edwards 2012.)

Consider, for example, the spatial model presented in EU Profiler, developed for the elections for the European Parliament in 2010. As Figure 2 shows, it presents users with a space with two axes: one called 'socio-economic left-right' and the other 'pro-anti EU integration'. (It should be mentioned that EU Profiler also offers options to further analyse the result in the form of a list, as well as a spider diagram.) These dimensions are supposed to capture the structure of the political landscape in this context. The developers determine in advance to which dimension each issue belongs (EU Profiler 2009). Consider what one might call a 'formal' and 'informal' view of what an election is about: on the one hand, one might include only issues on which the elected body (here: the European Parliament) has legal competence; on the other hand, one might include issues on which it does not formally have competence, but which are nonetheless discussed in the electoral campaign.[11] EU Profiler appears to have chosen an informal approach, by including issues on which the European Parliament has no or very little formal competence, but which did attract attention in the electoral campaigns, such as child care subsidies, euthanasia, and the extent and depth of European integration. Pro- and anti-EU integration issues, while important to many of the parties running for the EP, typically are an intergovernmental affair outside the scope of powers of the parliament (Mair 2007: 11). By endorsing this particular representation of the dimensional structure of political competition, the developers are taking a stance at a general level on what matters in the election. In this case, they have chosen to present what some of the parties say is at stake in the election, not what from a legal perspective the election is about. By giving this dimension prominence in the VAA result, they implicitly recommend that users take these issues into consideration when going to the ballot box.

The important point for our purposes is that even if the dimensions chosen by the developers reflect significant correlations on an aggregate level among the opinions or behaviour of voters and parties, this empirical fact would not be enough to justify their pertinence in providing voting advice. This is because such correspondence does not show that users have a *good reason of their own* to take these dimensions into account. For the purposes of voting advice, the dimensional structure of political space is a normative and political issue, not a purely epistemic one.

In short, our analysis of the presentation of VAA results shows that whether a VAA uses a spatial model or a list, the developers do at least implicitly take a stance on what the salient

issues or dimensions of competition are. A VAA does not simply *reflect* what is at stake in the election, neutrally passing along information. Rather, it structures the information in a way that is informed by the developers' picture of politics. This means that VAA developers have an active hand in *staging electoral dioramas*, not just in polishing mirrors.

6. Conclusion

The upshot of our analysis is that scientific expertise cannot fully resolve what we have called the problem of representation—the complex relation between the picture of what is at stake in an election presented by a VAA to its user and the actual reality of electoral politics. The elements brought together in the foreground of a VAA (user preferences, party positions, etc.) do not belong together in virtue of the inherent structure of the world of electoral politics. They belong together in virtue of a particular interpretation of the political world, a 'picture of politics' that the developers presuppose. That what is at stake in an election are one's policy preferences, and that one's distance from parties is to be understood in terms of agreement about proposed policies, is not an objective fact about the political world as such. The problem of representation in VAAs is not a merely epistemic, but a political problem.

We are likely to miss these political aspects of VAA construction if we interpret the VAA as a mirror of electoral politics. The mirror interpretation suggests that making an adequate representation of what an election is about is a matter of perfecting and tweaking the instrument to ensure sufficient accuracy, avoiding distortion, getting the right angle, etc. The instrument itself (or its maker) does not appear to structure what appears within the image; the image is conceptualised as a reflection of the structure of the part of the world it is aimed at. We are thus encouraged to mistake the background picture of politics for a direct access to the 'reality' itself. In a diorama, in contrast, the dimensionality is (re)constructed by the maker. In the act of presenting the viewer with the diorama, he or she is invited to endorse the conceptual background—the artistic vision, narrative or picture of politics—in the light of which the elements make sense (at least insofar as he or she takes it seriously).

The implication for the present debate on VAAs is to foreground the importance of the articulation and justification of the conceptual and normative presuppositions of VAAs, in addition to the epistemic concerns that currently take centre stage in the debate. Furthermore, if this analysis makes sense, then to treat the VAA as mirroring what is at stake in the election is not just to misunderstand the VAA's role in the electoral process. It may even have the effect of undercutting the VAA's aim of enhancing voter competence. Insofar as a user (or a developer, for that matter) who is presented with the foreground of the application mistakes its representation of the political landscape for a reflection, the background picture of politics does not appear as such at all. In that case, he or she is encouraged to construe its political presuppositions as simply part of the nature of electoral reality. VAAs can enhance voter competence under a very specific aspect: that of the citizen's voting in line with his or her preferences on particular issues. But VAAs may undermine voter competence insofar as the political judgements with regard to what the election is *about*, made in the background of the application, are hidden from view.

One reaction to this could be: 'Many VAAs do have something to say about what they do or do not represent. And this is exactly what they need to do in order to help prevent this problem.' Indeed, many VAAs work with options for the user that help him or her fine-tune the application. Moreover, developers are working on a wider repertoire of VAAs, focused, for instance, on political style, or looking retrospectively at past performance, etc. What

these options in a way enable the user to do is to change the background picture of politics at work in the application so that a new evaluation of the attractions of the parties in the election becomes possible. If they offer such options without explaining why, they implicitly acknowledge that a VAA always works against the background of a structuring yet politically controversial picture of politics. If they offer such options while indeed explaining that a VAA cannot help but to generate its advice under certain aspects and at the cost of the exclusion of others, then they are responsive to the kind of problem we have tried to indicate.

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NOTES

1. There are several useful overviews of the literature available (Cedroni and Garzia 2010; Garzia and Marschall 2012, 2014; Rosema et al. 2014).
2. In asking how VAAs *should* be interpreted, our approach differs from empirical studies of how VAAs are in fact perceived and interpreted by their users (e.g., Alvarez et al. 2013; Triga 2014).
3. For a discussion of the sense of 'representation' in relation to VAAs, see Anderson and Fossen (2014: 223–5). The political significance of the aesthetic sense of representation is highlighted in the work of political thinkers such as Frank Ankersmit, Cornelius Castoriadis, and Claude Lefort (e.g., Ankersmit 1997; Näsström 2006). Outside the political context, Van Fraassen (2010) provides a helpful discussion of representation as picturing.
4. This is not to deny that developers may also have other motives for developing a VAA: in addition to improving the electoral process, they may have commercial purposes, or may want to gather research data. But such motives are not usually appealed to when justifying the existence of VAAs.
5. It is not clear to us exactly what difference it makes whether the result is said to be 'advice' or merely an 'aid'; either way the user is presented with information that is supposedly pertinent to his or her voting decision. Nuytemans et al. (2010: 126) seem to suggest that when a VAA purports to give advice, it bypasses the voter's own judgement. But it seems to us that an adviser does not normally impose a judgement on the advisee that is to be

followed 'blindly'; rather she helps him to see some of the reasons relevant to a particular decision. So we do not think VAA developers need to refrain from calling the result 'advice'.

6. VAAs that use a mix of modes of presentation include, for example, EU Profiler (EU), Smartvote (Switzerland) and Vote Compass (developed for various countries, sometimes with a two-dimensional model, and sometimes with multiple models); VAAs that exclusively use lists include Wahl-O-Mat (Germany); Doe de Stemtest (Belgium) and StemWijzer (The Netherlands).
7. Some form of measurement is still required, of course, to procure information about user preferences and party positions.
8. Louwerse and Rosema (2014) suggest that list-based results are also based on spatial models, but with a much higher number of dimensions. This makes sense from a computational perspective, but it ignores the conceptual distinction between the different meanings they communicate.
9. Two basic approaches to specifying the number and content of dimensions of contestation are distinguished in the literature on spatial models (Benoit and Laver 2012). Given a dataset of preferences of political actors on a range of issues, these actors can be positioned in a unified space based on correlations found in the data (*ex post*), or based on a prior understanding of the relevant dimensions, derived from theory or previous data-analyses (*ex ante*). For VAAs, an ex-post approach is unavailable, however, if only because in a VAA the 'data' (user input) are not available in advance; the developers therefore must have some prior knowledge of the dimensional structure of political competition. Of course this is not to deny that VAA-generated data can be used also to construct ex-post spatial models (Mendez and Wheatley 2014).
10. There is no consensus among political scientists on the number and content of the dimensions of political contestation in many electoral contexts, and it is often emphasised that there is no single right dimensional model of a particular context (Benoit and Laver 2006: 110).
11. We thank Tom Louwerse and Simon Otjes for drawing our attention to this distinction.

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