



General Description and Methodology

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I. EU Profiler User Information

The EU Profiler Team

The EU Profiler, the first Europe-wide voting advice application (VAA), is the work of a consortium of institutions in Italy, The Netherlands and Switzerland. The EU Profiler consortium consists of the European University Institute (EUI) in Florence, the Amsterdam-based company Kieskompas and the NCCR Democracy (University of Zurich/Zentrum für Demokratie Aarau)/Politools network. The project is led by the Robert Schuman Centre for Advanced Studies (RSCAS), part of the European University Institute (EUI) and is developed under the auspices of the EUI-based European Union Democracy Observatory (EUDO). Project leader Professor Alexander H. Trechsel at the EUI oversees the contribution of more than 120 academic collaborators from across Europe. The overall development is overseen by a Steering Committee that consists of representatives of the developing institutions and other Political Science Professors.

Technical expertise is provided by Kieskompas who have previously delivered profiling tools for the Belgian and Dutch national elections of 2007 and the American Presidential Election of 2008. Additionally the NCCR Democracy (University of Zurich/Zentrum für Demokratie Aarau) offers in close cooperation with the Politools network (owner and developer of VAAs in several European countries) scientific input, as well as practical experience and in-depth knowledge of developing specialized VAA-features. The three partner institutions jointly finance the project, with the acknowledged support of the Max Weber Fellow Programme at the EUI.

Apart from the conceptualisation and the technical development of the EU Profiler, so-called “Country Teams” were responsible for researching and ‘coding’ the political parties featured in the tool, as well as carrying out the groundwork that made this tool possible. The Country Team members are mostly political scientists at a doctoral and post-doctoral level and are experts in the party politics of their home countries. Their work is the backbone of the project, meticulously consulting and researching each party and finding evidence of their policy positions. The majority of Country Teams members are affiliated with the EUI, but several collaborators are based in other parts of Europe.



Please see the “colophon” in the tool for further details on the people involved in the project.

In practical terms the development of this tool has involved the accumulation of data from nearly 300 political parties representing 34 different countries and regions in Europe. Working in more than 20 different languages with team members spread across the continent it is a ground-breaking multi-disciplinary project that has brought together a wide range of experts in a variety of fields.

What is the EU Profiler?

The EU Profiler is a means for voters to gain an unobstructed view of the European political landscape, and their place within it. This landscape is defined by the policies of the parties vying for election to the European Parliament (EP).

The EU Profiler gives users a ‘political profile’ based on their responses to a questionnaire. The user is invited to offer their reaction to a series of 30 statements (see example below) with one of five responses, ranging from “Completely agree” to “Completely disagree”. Users can also offer no opinion.

At the same time, the EU Profiler holds a record of the positions held by the political parties on the same 30 issues. The user’s political profile can then be examined in relation to the political parties of Europe. This examination is aided by a variety of presentations, displays and analyses.

To allow the tool to reflect more accurately the personal positions of the user, they are given the option to ‘weight’ their responses. This means going down a list of the responses they have given and assigning a degree of personal importance to each one – very important, normal (the default position) or less important. The tool then uses a complex algorithm (see ‘calculation’ section) to give greater emphasis to the positions weighted by the user as being ‘very important’, and less emphasis to those weighted as ‘less important’.

The outcome for the user is a highly accurate political profile. The process of using the tool also gives them greater awareness of the issues being debated, the intentions of the political parties running in the election and, in a more abstract sense, a greater ownership of the European democratic scene.



An example of an EU Profiler statement

A screenshot of the EU Profiler web application. At the top, there is a navigation bar with the 'eu★profiler' logo and links for 'Home', 'Issues', 'Importance', 'parties', and 'Result'. Below this is a progress bar with numbers 1 through 30. The main content area has a dark blue background. It displays the category 'Welfare, family and health' and a statement: 'State subsidies for crèches and child care should be increased substantially'. At the bottom, there are six response buttons: 'completely agree', 'tend to agree', 'neutral', 'tend to disagree', 'completely disagree', and 'no opinion'. A link 'You can go back to any question' is visible in the top right corner of the main area.

The primary job of the EU Profiler is this, providing voters with thoroughly researched information about the policies of the political parties due to take part in the European Parliament elections.

Secondary to this, the EU Profiler will offer academics an overview of the European electorate. As well as the party positions, the application will store the anonymous responses of each user. For more on this, see the 'Data Use' section below.

Selecting the Parties

While it is preferable for a party profiling tool to include every party that is running in an election, it is not always feasible from a practical and technical point of view. This was the case with the EU Profiler. The EU Profiler team tried to be as inclusive as possible and the exclusion of a party was only considered if a range of opinion polls strongly suggested that the party would not win a single seat in the election; if the party could not provide adequate documentation to be positioned on the 30



statements or finally, if the party did not reply to the self-placement (see below) invitation. Almost every party that currently has a seat in the European Parliament or national parliaments and that is polling to win at least one seat in the EP is included. It should be noted that all rights are reserved by the EU Profiler consortium for the selection of parties to be integrated in the EU Profiler.

Selecting the Statements

The most critical aspect of preparing a party profiler is the selection of the statements used in the questionnaire. The statements chosen must be relevant to the politics of the day, cover a range of policy areas and illustrate differences between the parties involved. Early VAAs relied heavily on the parties themselves to decide which issues should be presented. This left the creators open to pressure from parties with an interest in highlighting or de-emphasising certain issues. After analysing the risks of such an approach, the EU Profiler consortium developed an alternative method that is more immune from manipulation and more likely to guarantee neutrality.

Party manifestos were analysed to understand not only how frequently certain policy areas were mentioned, but also the 'urgency' with which parties discussed individual issues. At the same time, opinion polls (above all the Eurobarometer), earlier party manifesto coding, groups of experts, academics and journalists were consulted for what they considered to be the key issues in the election. The various lists were then analysed together and the issues that occurred most frequently and urgently were selected for inclusion. The issues were grouped in nine policy fields which cover a very large portion of contemporary democratic policy making and attitudes toward politics in the member states¹. Based on the issue identification, the 28 general statements were developed by members of the Steering Committee and have been largely discussed by numerous specialists in the field in order to make them as precise as possible. Some of the statements are directly taken from traditional survey questions (such as "European integration is a good thing"), allowing to

¹ The policy fields featured in the EU Profiler are: Welfare, family & Health; Migration & Immigration; Society, Religion & Culture; Finances & Taxes; Economy & Work; Environment, Transport & Energy; Law & Order; Foreign Policy; European Integration; Country-Specific.



validate/compare our data with other sources. In addition to the 28 statements that will be asked in all countries, two country specific questions were developed for each national (and in the case of the UK and Belgium, even regional) political context. The statements were only shown to the parties when they came to complete the self-placement questionnaire. This method did not give political parties any opportunity to influence the selection or formulation of the statements.

Coding the Parties

The same approach was applied to the coding of the parties – that is the allocation of responses (“tend to agree” etc) to the propositions put forward in the questionnaire. While parties were given the opportunity to ‘self-place’, to respond to the survey themselves, their final responses were allocated by a team of regional experts with access to all of the relevant documentation and information that the parties offer, such as manifestos and statements.

Each position has been very carefully researched by the political scientists, who decided on the final positions by referring to a hierarchy of sources – the top being the party’s own EP election manifesto. In instances where the party has not printed any opinion, the researchers referred to other party manifestos, party websites, statements in the media and other secondary sources.

When the party self-placement and the expert coding were completed, the two results were compared. Where there were discrepancies, the party was asked to provide more support for its declared position, and a final answer was settled upon. While the parties themselves were consulted throughout, the final decision lay with the country team, offering a better chance of complete impartiality.

Data Use

The advantages of this tool to voters are self-evident. It enables the users/voters to evaluate their own political preferences and to compare these with the policy positions of their national parties as well as with the positions of parties in other European countries. The implications for academic research are longer-term and equally intriguing. Polling Europe-wide public opinion on some of the most critical



political issues facing Europe will in itself turn out significant results. Combine this with the final data on voting behaviour and the political participation of the European electorate may come into focus for the first time. Add to that the new insights into the parties themselves such as campaign dynamics and party cohesion and it is clear that the EU Profiler potentially offers a wealth of research material. A high level of pan-European cooperation will enable academics to make the most of these new findings.



II. Calculation method for the EU Profiler '*match list*'

Generating profiles

The political profile of a party or voter is defined by the set of answers to the EU Profiler questionnaire.

Before a match list for a voter can be computed, the profiles of the political parties as well as the voter have to be gathered. The profiles are based upon the questionnaire. They are composed of 30 statements to political issues and values.

To answer these statements the following answer options are used:

Table 1: Answer options

Statements / answer categories	Political parties	Voters
"Completely agree"	X	X
"Tend to agree"	X	X
"Neutral"	X	X
"Tend to disagree"	X	X
"Completely disagree"	X	X
"No Opinion" *		X

* Default position for voters

The following two points regarding the questionnaire and matching process are very important:

1. For political parties all statements have to be answered in order for them to be included in the matching process. In contrast the voters can answer as many questions they like.
2. Voters can weight single questions with the following options:
 - "-" less important
 - "=" normal (default position)
 - "+" very important



A voter's political profile contains – apart from the answers – also the weighting of each statement.

Comparison of the answers

In a first step numerical values are allocated to single answers of political parties and the voter:

Table 2: Numerical values of the answer options

Answers	Score
"Completely agree"	100
"Tend to agree"	75
"Neutral"	50
"Tend to disagree"	25
"Completely disagree"	0

Now the answers of the voter are compared with the political parties' and the so-called accordance score ('matching points') is calculated on the basis of the following formula:

$$MP_i(v,c) = 100 - |a_{iv} - a_{ic}| \quad (1)$$

Whereas $MP_i(v,c)$ stands for the quantity of the accordance score ('matching points') of the answer combinations of voter v and party c at the statement i . a_{iv} stands for the voter answer to statement i and a_{ic} for the party-answer to statement i .

Based on that formula the following answer combinations result for the statements:

Table 3: Accordance value score

→Political party ↓Voter	“Completely agree”	“Tend to agree”	“Neutral”	“Tend to disagree”	“Completely disagree”
“Completely agree”	100	75	50	25	0
“Tend to agree”	75	100	75	50	25
“Neutral”	50	75	100	75	50
“Tend to disagree”	25	50	75	100	75
“Completely disagree”	0	25	50	75	100

Integration of the saliency

The saliency chosen by the voter is integrated into the calculation by multiplication of a penalty score (which corresponds to 100 minus the accordance score of each statement) with a respective saliency factor.

Depending on whether a statement is classified as “less”, “normal” or “very important”, the corresponding penalty score is multiplied with the factor 0.5, 1 or 2 (see formula 3):

$$PS_i(v, c, W) = (100 - MP_i(v, c)) * W_i \quad (3)$$

Where $PS_i(v, c, W)$ stands for the weighted penalty score point of the voter v and the political party c at the statement i . $MP_i(v, c)$ stands for the unweighted accordance score of the voter v and the political party c at the statement i and W_i for the saliency of the statement i through the voter v .



Calculation of the weighted accordance score

Now all information for the calculation of the weighted match list is available. For the comparison of one voter with one political party all the weighted penalty scores over all statements are summed-up and divided by the number of statements for which an accordance score could be calculated (note that statements where the party has “no opinion” are not included in any match list calculation), which gives us the average of the weighted penalty scores. Finally, the weighted accordance score of a voter (v) with a party (c) is calculated by subtracting the average penalty score from 100 (see formula).

$$MP(v,c,W) = 100 - (\sum PS(v,c,W)) / NMP(v,c) \quad (4)$$

Where NMP corresponds to the number of accordance scores of a voter (v) with a party (c).

This calculation procedure is repeated for all the political parties. The resulting ‘weighted match list’ presents the political parties ranked according to their weighted accordance score in percent.



III. Calculation method EU Profiler 'Compass'

VAAAs such as the EU Profiler provide guidance by comparing personal issue positions of users with the issue positions of various parties or candidates, based on a built-in Multi-Attribute-Utility-Decision rule (MAUD).

The EU Profiler is based on an idea, amongst others, that opinions on individual issues can be aggregated to a limited number of issue dimensions. In the graphical representation offered to the user, the position is the aggregated mean of all positions on each dimension. Thus, the EU Profiler aggregates preferences per dimension, based on a Euclidean distance model to combine preferences on its issue-dimensions.

Subsequently, the distance between the user and each of the parties is computed by averaged, or equivalently, summated positions $\sum_k P_{ojk}$ of each party o and averaged positions of the voter $\sum_k I_{jk}$ on the two dimensions $j1$ and $j2$, before distances along each of the axes are computed. The averaged positions of the parties and the user along the two dimensions are presented on the flat computer screen, thus giving rise to Euclidean distances (Minkowski metric $r = 2$) between a voter and a party:

$$A_o = \sqrt{ \left[\sum_j \left| \sum_k P_{ojk} - \sum_k I_{jk} \right|^2 \right]^{1/2} }$$

Note that the computation of averaged, or summated positions on the two axes depends on a priori considerations, both in terms of which dimension an issue belongs to, and which side of the dimension a specific issue positions belongs to.

The reduction of the political hyperspace to two dimensions allows the user to plot themselves on any combination of issues. Both the position of the user and the position of parties are presented to the viewer as points in a two-dimensional space, in which the standard deviations of the user on each of the two dimensions are used to plot the 'uncertainty region' of the user as an ellipse.

This method does not take the saliency (W) of separate issues into account and there is no party-specific weighting of the issues for each of the parties. To enable parties and users to express their ambiguity or indecision with regard to issues, the EU Profiler allows parties and voters to have moderate pro-positions ($+ \frac{1}{2}$), moderately



con-positions ($-\frac{1}{2}$), and even neutral positions (0), thus striving for a ratio-level measurement of issue positions.

Applying the 'EU Profiler compass'

In the 'Compass', the EU Profiler result is displayed on a graph as a pencil point. First, a temporary screen appears that indicates which party the user is closest to, and which party the furthest from. By selecting and deselecting policy domains on the right side in the browser, users can further investigate their political position. By selecting and deselecting policy domains (for example 'Law and order', 'Foreign policy') the user can also see the positions of political parties accordingly.

In the two-dimensional graph, these dimensions are used:

- Horizontally: Socioeconomic left-socioeconomic right
- Vertically: Pro EU integration-Anti EU integration

Before we focus on the details of the calculation of the EU Profiler compass, we would like to draw your attention to:

- The fact that the *EU Profiler Compass* is not influencing the match list, it is only an independent attractive visual positioning of party profiles.
- The *EU Profiler Compass* does not include all the 30 statements as there are statements that cannot be attached to one of the 2 dimensions (see below) at all. Therefore this visualisation can, in contrast to the match list, only be regarded as simplified partial analysis.

Calculation of the distances in the EU Profiler compass

The political landscape consists of two dimensions (x-axis and y-axis), each with two opposite poles, ranging from -2 to 2. The position completely „socioeconomic left“ is thus $x=-2$; completely „socioeconomic right“ is $x=2$; completely „anti EU integration“ is $y=-2$; completely „pro EU integration“ is $y=2$. Statements in the EU Profiler - depending on the issue and wording - relate to either only one of these four poles, or



none (in the latter case, the paragraph below does not apply).

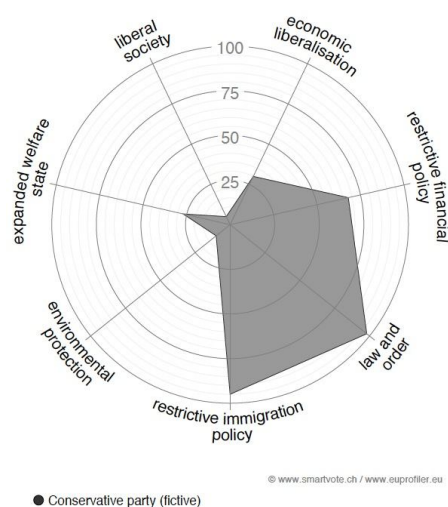
If you completely agree with a specific statement, this is equivalent to a two-point score on the axis, while 'tend to agree' equals 1 and 'neutral' 0. Of course, disagreement results in negative scores, be it -2 or -1. The (arithmetic) average of party as well as user positions on the two axes on all thirty statements will be taken and initially displayed in the two-dimensional spectrum. When policy domains (for example 'Migration and immigration') are selected and deselected, then statements related to these policy domains will respectively be included or excluded from the calculation of the (arithmetic) average position.

III. Calculation method for the EU Profiler ‘Spider’

Introducing the *EU Profiler spider*

Another feature of the EU Profiler website is a graphical representation of a political profile named *EU-spider* (see figure 1).

Figure 1: Example of an *EU-spider*



Source: www.euprofiler.eu

The *EU-spider* displays the values and political attitudes based on 7 thematic dimensions. Per issue a value between 0 and 100 percent can be achieved. 100 percent implies strong agreement to a formulated political aim, 0 percent implies complete disagreement with it.

Before we focus on the details of the calculation of the graph, we would like to draw your attention to:

- The fact that the *EU-spider* is not influencing the match list, it is only an independent attractive visual positioning of party profiles.
- The *EU-spider* does not include all the 30 statements as there are statements that cannot be attached to one of these 7 dimensions at all. Therefore this visualisation can, in contrast to the match list, only be regarded as simplified partial analysis.



The *EU-spider* dimensions

The *EU-spider* consists of seven dimensions representing political issues and the corresponding value of the party/user on that specific dimension:

1. Liberal society
2. Expanded welfare state
3. Economic liberalisation
4. Restrictive financial policy
5. Law and order
6. Restrictive immigration policy
7. Environmental protection

The calculation of the *EU-spider* dimensions

The calculation of the *EU-spider* values is based on the answers of the EU Profiler questionnaire. For each statement the agreement to each dimension is calculated. For that reason the answers are assigned according table 4:

Table 4: Numerical values of the answer options

Statement answer	Points
"Completely agree"	100
"Tend to agree"	75
"Neutral"	50
"Tend to disagree"	25
"Completely disagree"	0

Some statements that have to be answered negatively for agreeing to a particular policy dimension of the *EU-spider*. Answers of such statements receive a pole change that means for these statements the following distribution is valid:

Table 5: Numerical values of the answer options (pole changed)

Statement answer	Points
"Completely agree"	0
"Tend to agree"	25
"Neutral"	50
"Tend to disagree"	75
"Completely disagree"	100

The actual reached agreement level is calculated by summing-up the according answer scores.

The actual value drawn on the spider graph is given by the actual reached agreement as a percentage of the maximal possible agreement. The maximal possible agreement is given by multiplying the number of statements for this dimension by 100. For example, is one dimension attached to 6 statements, the maximum level of agreement is 600.