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ARTICLE

Party profiles on the web: an analysis of the logfiles of non-partisan interactive political internet sites in the 2003 and 2004 election campaigns in Belgium

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Abstract

During recent election campaigns non–partisan party profile websites (PPWs) have become hugely popular in various countries with multiparty systems, sometimes even attracting 25 percent of all voters. On these interactive websites, PPW users respond to policy questions, and their answers are used to calculate the distance between their own preferences and party agendas, resulting in an individualized 'party profile'. PPWs can be seen as one of the few innovations in election campaigning that fully exploit the internet's interactive opportunities. The analysis in this article of the log files of 2003 and 2004 Belgian PPWs demonstrate that PPW users tend to be highly educated, male and young. Party and policy preferences of late PPW users (the final days before the elections) are not more crystallized than those of early PPW users (40 days before the elections). The article concludes with speculation on what this finding might reveal about campaign dynamics.

INTRODUCTION

The interactive opportunities created by the internet are among the most appealing and innovating features of political internet use. Ideally, the medium allows for a more intense and therefore more democratic form of dialogue and exchange of information between politicians, political parties and institutions, on the one hand, and citizens, on the other (Coleman, 2005). As Bimber and Davis state:

> The interactive nature of the new media environment also makes it obviously different . . . Interactive means that information flows in multiple directions. The fact that the internet audience does not merely receive information from candidates in office but reveals information and communicates outward makes the new medium potentially very different from traditional media. (2003: 5–6)

Because of this interactive character, back in the 1990s the internet was heralded by some authors as bringing a new and more democratic form of political communication (Coleman, 1999; Davis and Owen, 1998; Morris, 1999; Papacharissi, 2004). However, since that time most of the research on the political use of the internet has resulted in dampening this initial enthusiasm (Margolis and Resnick, 2000). Ward et al. summarize this evolution succinctly in their observation:

> Much of the initial work was highly speculative and tended to be mostly wildly optimistic about the internet's mobilizing potential. More recently, empirical studies, particularly from the USA, have given a more moderate, albeit predominantly skeptical, interpretation of internet effects' (Ward et al., 2003: 652).

There are three main reasons for this sobering of expectations surrounding the initial spread of the internet. First, one of the main problems associated with political internet use remains unequal access to the internet. Although there are encouraging signs that this digital divide might have become less chrystallized than it was just a few years ago, virtual inequality certainly remains a problem for those advocating reliance on the internet for political purposes (Bimber, 2000; Korupp and Szydlik, 2005; Mossberger et al., 2003). Second, although research on the consequences of internet use is still at a very preliminary stage, thus far there are few indications that the introduction of the new medium effectively would lead to politicizing new groups of the population, groups which did not participate fully before the arrival of the

new medium. It is more likely that the reinforcement effect seems to have prevailed: groups which were already active, and already had access to political information, simply adopted a new medium to satisfy their political curiosity (Jennings and Zeitner, 2003; Katz et al., 2001, Stromer-Galley, 2004). Thus far, the reinforcement model seems to be a better way to understand the effects of internet use than the mobilization model (Norris, 2001). Third, a reason for concern might be that in practice, the interactive possibilities of the internet are not always put to full use, as there is a clear tendency for the medium to be used for the continuation and enforcement of previously existing top-down communication patterns. For example, political parties have become prolific users of the new medium, but in most cases their webpages are used to disseminate information about candidates, campaigns and party agendas (Gibson and Ward, 2000a, 2000b; Hooghe and Stouthuysen, 2001; Norris, 2003; Tkach-Kawasaki, 2003). Various government offices have used the internet to innovate the way that they deliver services to citizens, in a process toward e-government (West, 2004). This article does not wish to question the fact that these forms of innovation might lead to more performative and effective forms of government, and therefore could enhance the legitimacy of political institutions. However, the conclusion remains valid that the introduction of the internet in itself has not structurally altered the direction of communication flows: party headquarters and political institutions continue to communicate in a top-down fashion with citizens, the main difference being that now, new media are used to intensify this flow of communication (Margolis and Resnick, 2000).

With regard to political and electoral campaigns, the internet has quickly established itself as an important medium (Norris, 2002, 2003). To some extent, the internet was adopted by traditional political actors as parties and candidates increasingly rely on the web as a campaign tool (Williams, 2006). However, the interactive technology of the internet has created new opportunities for accessing non-partisan information on parties and candidates. One of the main innovations in this respect are the party profile websites (PPWs), which have sprung up in various European countries. This article wishes to demonstrate that these websites have become a popular campaign instrument for a large part of the voting population. As such, these websites have the potential to alter the dynamics of electoral campaigns. This claim will be supported by the analysis of data on the users of a highly successful Belgian PPW.

NON-PARTISAN PARTY PROFILE WEBSITES

In recent years, PPWs have proven to be hugely popular during various election campaigns, mainly in countries with multiparty political systems. The principle on which these websites are based is rather straightforward: the respondents fill in a questionnaire about their policy preferences and opinions, and by assigning

967

weight factors to their responses, every respondent receives an individualized profile about which party manifesto is most closely associated with their policy preferences. Thus, a PPW is an expert system for classification (Stefik, 1995). Most often these websites present themselves as a kind of 'vote advice', playing with the notion that voters and users should 'follow' the party advice given to them. However, the websites' smallprint usually mentions that the party profile only offers an indication of the party manifesto that is closest to one's own preference.

Maybe these systems do not make much sense in two-party systems, where it takes little effort to get a grasp of party positions. However, in countries with six or more parties, getting such an overview requires much more energy from voters, and in these circumstances an individual party profile might fill this information gap. In countries such as Belgium, Germany, the Netherlands, Scandinavian countries and Switzerland, PPWs have become popular during election campaigns, and various newspapers and television stations offer them on their websites.

However, thus far these PPWs have never been studied systematically. One of the reasons might be that the phenomenon simply does not exist in two-party systems, and therefore it has not yet caught the attention of US- or UK-based social scientists. Furthermore, most of these PPWs are operated with commercial purposes. The technology behind the profile calculation is sold to, for example, newspapers or television stations offering the interactive device on their websites. Because of these commercial considerations, both the profile producers and the media organizations hosting them have been reluctant to offer access to researchers willing to investigate the new phenomenon. Moreover, the users of these PPWs reveal sensitive information about their policy options and preferences, and privacy policies prevent dissemination of this information.

This is a lacuna in current campaign research, since we know that these PPWs can play an important role in campaign dynamics. First, the numbers are impressive. The first PPWs appeared in the Netherlands during the elections for the Dutch parliament in 1998. At that time, typically only universities, large companies and very few, rather privileged households had access to the internet. Nevertheless, the systems available then were accessed more than 250,000 times, which corresponds to 2.5 percent of the Dutch electorate. In the 1999 elections in Belgium, the system 'Wij kiezen partij voor u' (We choose for you') was accessed by more than 150,000 visitors, which corresponds to four percent of the electorate in the Dutch-language area of Belgium. Since then, there have been PPWs in operation during all Dutch and Belgian election campaigns.

In the Dutch parliamentary elections of 2002, two competing systems were consulted jointly 2.6 million times, corresponding to 25 percent of the total electorate. In addition, the format has been implemented in Germany and Switzerland. In Switzerland, more than 30,000 profiles were supplied by the

trilingual 'Politarena', and some 3.6 million profiles were supplied by the German 'Wahl-O-Mat' at the 2002 Bundestag elections (Hebecker, 2002). During the campaigns for the May 2003 federal elections and the June 2004 regional elections in Flanders, more than 210,000 and 155,000 party profiles were provided by the leading daily, *De Standaard*. This is far more than the number of people actually subscribing to the newspaper, amounting to four percent of the total electorate of Flanders.[1]

It should be noted that this plethora of systems actually stems from three different origins. The Dutch *Stemwijzer* and the German and Swiss systems were built under the auspices of the Dutch Centre for Political Participation, a subsidiary of the Dutch Ministry of the Interior. All of the television shows were produced by the Dutch production company Eyeworks, which is owned by a former soap series actor. The systems 'Wij kiezen partij voor u' and 'Kieshulp' ('Helping to Choose') were developed by the Department of Artificial Intelligence at the University of Groningen.

In countries such as Belgium, Germany and the Netherlands, not only have voters discovered the importance of PPWs, but political parties have paid increasing attention to this new format. There is some evidence that parties have become sensitive to the possible campaign effects of these party profiles. For example, during the 2003 campaign, the PPW of the public broadcasting corporation VRT revealed that a massive majority of users were in favour of restricting the rules on parole for convicted felons. In an immediate reaction to this news, the president of the Socialist Party, Steve Stevaert, tabled a motion to end this regulation, contrary to his longstanding party manifesto. In 2003 and 2004 the centrist Christian Democratic Party strongly protested against the proliferation of PPWs, their main argument being that it would lead to the dominance of a populist approach to politics.

Therefore, PPWs have become an important element of campaign dynamics, at least in multiparty systems. The obvious appeal of PPWs can be explained partly by its element of entertainment, but also by the general decline of partisanship among western citizens (Dalton and Wattenberg, 2000), thus creating more demand on behalf of citizens for relevant information on party positions. The success of non-partisan PPWs also implies that it has become crucial to integrate them in research on media and campaigning. After all, PPWs are one of the few examples of new forms of political communication that were completely impossible before the introduction of the internet. One could imagine that the PPW format (matching party manifestos with individual preferences) could be used also in print format, but this does not seem very appealing. If the promise that the new medium would lead to qualitatively new patterns of communication has been fulfilled somewhere, this relates to PPWs.

METHOD

The study of party profile websites

As previously mentioned, for commercial reasons, most PPW hosts are unlikely to offer information on the use of these websites. Fortunately, it was possible to gain access to the log files for the 'Wij kiezen partij voor u' PPWs offered by *De Standaard* (Belgium) during the 2003 and the 2004 election campaigns in Flanders. In 2003, elections were held for the federal parliament and in 2004 for the regional parliaments. Except for some very small groups, the same parties participated in both election campaigns without any obvious differences because of the different scale of the elections. Another consideration is that the information supplied by the PPW users is protected by privacy, and therefore cannot be communicated to third-party researchers. The newspaper was willing to make this information available for research, since both authors were involved in the project, providing consultancy and advice.

We fully realize that studying an initiative which one has been actively involved in as a scientific consultant creates serious deontological challenges. The risk is clearly present that researchers will show a tendency to be overly optimistic about the potential of the website (Diener and Crandall, 1978). We are aware of this risk and therefore will not enter into discussion about whether PPWs offer a useful or important contribution to electoral campaigning, or whether this leads to a marketization of election campaigns, as some critics have argued. In line with the Code of Conduct established by the American Sociological Association (1999), we believe it is important to reveal to readers this potential source of a conflict of interest, so that readers can judge for themselves whether the information contained in this article might be biased in some way.[2]

However, it is clear that without some form of involvement by the researchers, this unique dataset would never be available for scientific research. First, PPW hosts have no incentive to share this information with other actors, in what is a competitive market. In addition, as previously mentioned, opening up these data files to external researchers runs contrary to basic rules of conduct with regard to privacy of internet use.

In view of these considerations, we have decided to move ahead with the current analysis, since this is indeed the only possible way to open up this source of information for the scientific community. By acknowledging our prior involvement in this project, we provide the reader with information allowing for a personal assessment of the analysis presented (American Sociological Association, 1999). Since information is available on all PPW users, the traditional problems of representativeness and selection are not applicable to the dataset here. Using the log files allows us to determine quite convincingly exactly who these PPW users are. This information, in turn, should allow an investigation of the effect that PPWs might have on the future of campaign dynamics.

How the Belgian party profile website works

Typically, a PPW is launched eight to six weeks before election day, and the PPW host usually wants to attract media attention with this website. A PPW works by asking the user their opinion on a series of political statements. After collecting the user's opinion on a number of items (typically, about 30 items are necessary to obtain sufficient answers) a program calculates, for each political party, the correlation between the party manifesto and the policy preferences of the respondent. Some PPWs are based on the information contained in the party manifesto itself, others use independent experts (political scientists, journalists) to rate the party position on specific issues. Arranging the obtained correlations in descending order, one creates a list in which the first item corresponds to the party which fits the user best, the second item corresponds to the second-best fitting party, and so on. Essentially, this list is the party profile of the user. Most PPWs choose to visualize this list in a bar graph.

Gathering the user's opinion is done by presenting them with a number of statements in the form of Likert items. Respondents can indicate whether they agree or disagree with the statement, but also how important this particular item is for them. Some examples of recently used statements are:

> Abortion should be strictly forbidden.
> In life, you must reconcile with your fate.
> It is good that The Netherlands is taking in many asylum-seekers.

Subsequently, the software program computes the fit with the position for each political party. After aggregating all fit measures, the computer shows a graph to the user, which may look like Figure 1. This figure also lists the main political parties in Flanders: Groen! (the new name for the Green party, Agalev, obtaining four percent of the vote in 2003); SP.A (social democrats, 25 percent), Spirit (progressive nationalists, in an electoral alliance with social democrats), CD&V (Christian democrats, 20%), Vivant (independent liberal, in an electoral alliance with the liberals), N-VA (conservative nationalists, 5%), VLD (liberals, 25%) and Vlaams Blok (VB, extreme Right, 18%). A respondent receiving a profile such as the one given in Figure 1 has a strong ideological affinity with Groen! and they should be strongly opposed to the VB.

Data collection

Users of 'Wij kiezen partij voor u' PPW An important obstacle for the democratic aspirations of political internet use remains the fact that access to the medium is unequally divided. This digital divide phenomenon is present not only between developing and developed countries, but also within the developed world itself. In the early days of internet communication, access was highly skewed towards men and well-educated, high-income groups, but subsequently the divide has become less chrystallized, as increasing households acquired internet access (Hooghe and Vissers, 2006; Katz et al., 2001; Willis and
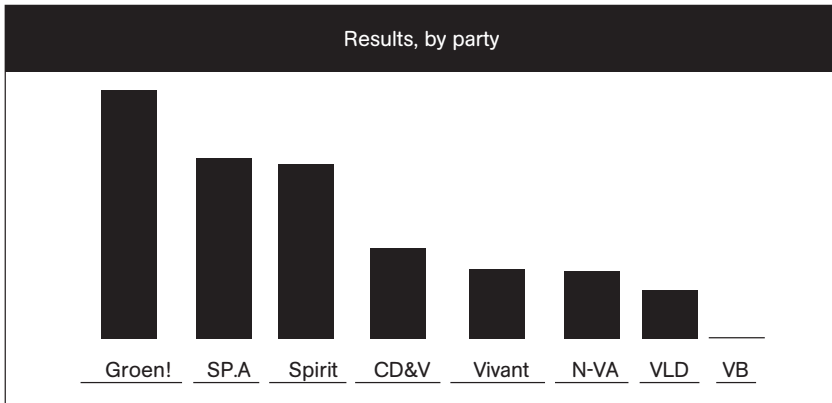
• Figure 1   Typical output of a PPW with Belgian political parties

Tranter, 2006). In Belgium, residential access to the internet has spread at an astonishing speed. In October 2004, the Belgian Internet Service Providers Association reported 1,622,000 residential internet connections, which means that almost 40 percent of all Belgian households have access to the internet. Of more importance is that 73 percent of all residential connections are based on broadband technology, where subscribers usually pay a flat fee per month. This implies that, contrary to earlier phone-based connections, there are no additional costs for the time being used to surf the internet (Internet Service Providers Association, 2004). Given these rapidly changing market and technology conditions, it becomes all the more relevant to find out who PPW users actually are. The data presented here are quite unique in this respect, since we are not aware of any other researchers who have gained access to the log files of a large, commercial website.

Measuring the precise number of unique visitors to a website is a very difficult, if not unsolvable, problem. In order not to be accused of boosting the number of visitors to 'Wij kiezen partij voor u' PPW, this study has chosen the most conservative approach to obtain visitor count by eliminating all questionable data points. The main problem is that technically it is impossible to distinguish between someone who fills in the questionnaire twice (e.g. to verify the effect of a different opinion on one specific item), and a household where different family members or friends use the same computer to fill in the questionnaire. To err on the side of caution, all multiple entries originating from the same computer were eliminated.

For each given profile, the following information was collected:

- the answers and weights that the user gave to the questions;
- the answers given to some sociodemographical questions (the user was allowed to skip all of these questions): age, education level, gender and voting behaviour during the previous elections;

- the party profile given to the user;
- the date and time of giving the party profile; and
- the anonymized internet protocol (IP) address[3] of the user, and if the user visited the site through a web proxy, appended with the anonymized IP of the proxy server.

All users from outside Belgium were eliminated, all questionnaires where fewer than 35 out of 42 questions were answered, and for every IP only the first occurrence was included. This procedure resulted in almost half of all the points being eliminated, ensuring that the remaining points represented unique users, people filling in the questionnaire for the first time (Table 1). This number is very reasonable given that some users, after getting their initial party profile, like to experiment with the system. In the remainder of this article only effective, i.e. unique users, will be analysed.

A first and very important question to be answered using the dataset is whether the PPW users can be considered representative of either the entire population or at least the population of internet users in Belgium. In Figure 2 PPW users are compared with internet users and the general population using age and gender as background variables. Information on internet users was obtained from the European Social Survey (ESS), conducted in 2004,[4] and information on the general population was obtained from census data (Nationaal Instituut voor de Statistiek, 2002, 2003). If we compare PPW users with the general population, it is clear that a strong overrepresentation of young internet users can be observed: more than half of all users fall into the 15–29 age bracket. PPW use declines dramatically over the age of 50, while there are a limited number of users below the age of 15. Despite the fact that many schools use PPWs in their classes, it is clear that schoolchildren do not provide the bulk of all PPW users (Figure 2). Second, political use of the internet tends to remain male-dominated, with men being more than 60 percent of all PPW users ($N = 119,832$ in 2003 and $N = 85,979$ in 2004).

Also with regard to education level, some of the earlier findings on political internet use are confirmed with a very strong dominance of respondents having pursued higher education (Figure 3). The fact that the 2004 sample is

• Table 1   Users of the 'Wij kiezen partij voor u' PPW in 2003 and 2004

| YEAR	2003	2004
Total users	213,477	156,633
Effective (unique) users	119,832	85,979
% used data points	56.1 %	54.9 %

PPW users in the dataset. Total users: initial number, effective users after correction.

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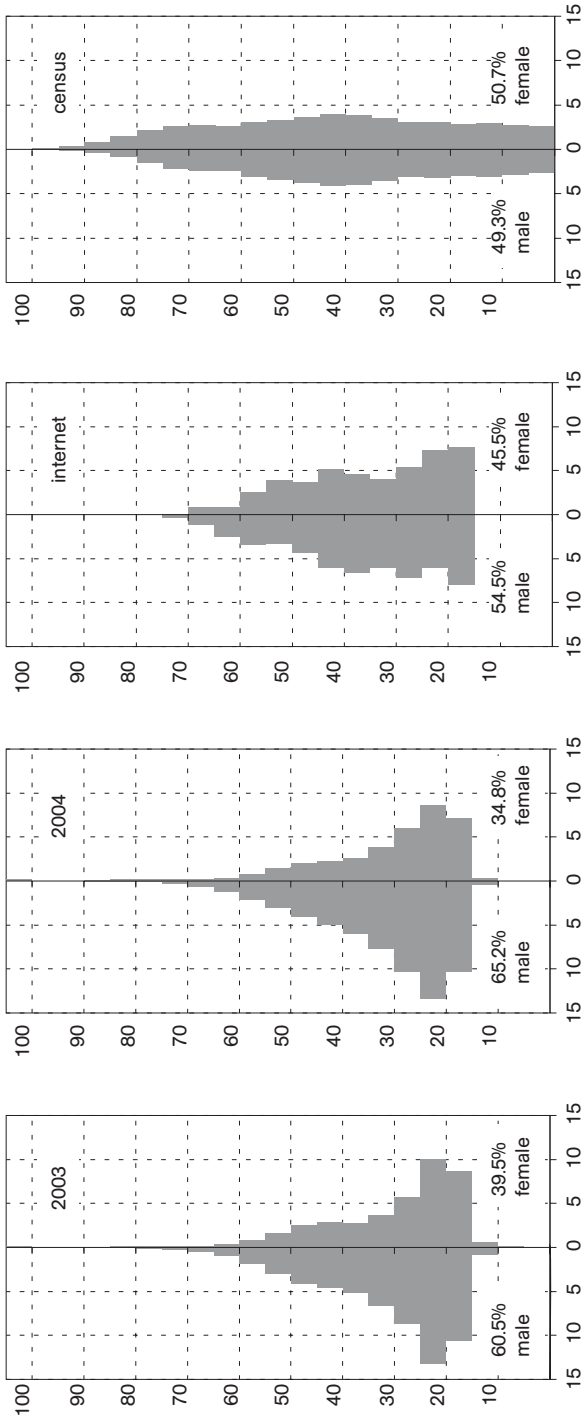
• Figure 2   Age (verical) and gender (horizontal) distribution of the users of the 2003 and 2004 PPWs
Note: The same information is shown for the online Belgian population (ESS, 2004, *N* = 848) and for the total population (census data, *N* = 119,832 in 2003 and *N* = 85,979 in 2004).
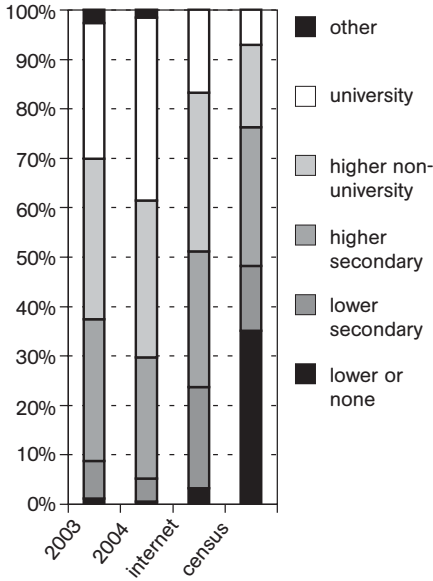
• Figure 3a   Education level of 2003 and
2004 PPW users
Note: *N* = 119,832 in 2003, *N* = 85,979
in 2004.
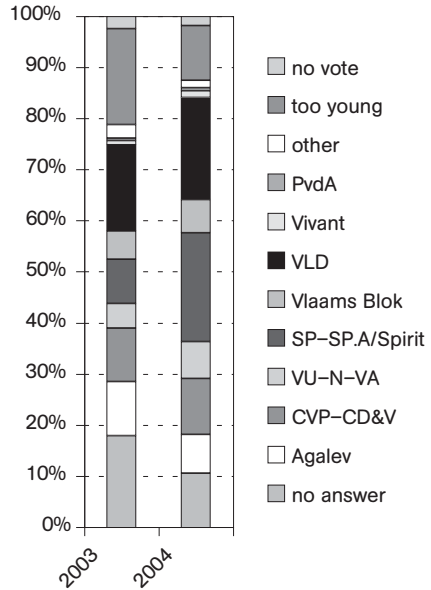
• Figure 3b   Voting behaviour of 2003 and
2004 PPW users
Note: *N* = 119,832 in 2003, *N* = 85,979
in 2004.

even more biased in this respect than the 2003 sample can be explained by
the fact that in 2004, the website was supported only by the *De Standaard*
newspaper website, which tends to cater to a highly-educated audience. Even
so (and also for the 2003 PPW), the observation remains valid that highly-
educated users are strongly overrepresented in the sample (Figure 3).

When PPW users are compared with the Belgian population which
regularly uses the internet for private purposes, it is possible to observe major
differences. While according to the European Social Survey, women make up
approximately 45 percent of all regular internet users in Belgium, they
account for fewer than 40 percent of all PPW users. While the survey shows
that approximately 18 percent of all internet users have a university degree
(which is a strong overrepresentation, compared with the general population),
for the PPW users this is in the range of 30 percent. In conclusion, PPW
users are younger, more often male and more highly educated than the
average internet user in Belgium.

Finally, in 2003, 82 percent of all users provided this study with information
on the party they had voted for during the previous elections, and in 2004 this
was 90 percent. In Figure 4, these data are compared with the actual election
results in 2000, 2003 and 2004 (Directie Verkiezingen, 2004).

Figure 4 does not contain any surprises: most parties are represented in the
sample. Major exceptions are the extreme-Right Vlaams Blok (here, we know
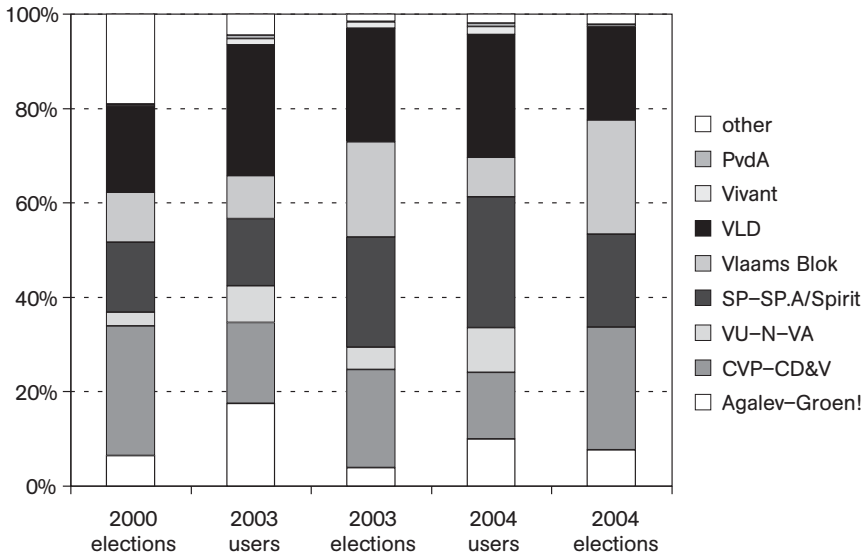
• Figure 4   Reported voting behaviour of PPW users compared with election results
Note: 2003 users = reported voting behaviour in 2000.
    2004 users = reported voting behaviour in 2003.
    Elections 2000, 2003 and 2004 = official results for founders.

that they tend to recruit mainly poorly-educated voters) and the Christian Democrats (CD&V), which tend to attract older voters. Given the fact that PPW users were younger and highly educated, this can be considered to be a relatively normal distribution: liberals, socialists, greens, and moderate Flemish nationalists were all clearly represented, roughly in line with their real electoral strength.

Actual party profiles

The next question we want to answer concerns the party profiles which actually have been given to the PPW users. Each user received a personal party profile, and summarizing or aggregating this information is a non-trivial task because every user received information on the distance (i.e. individual ranking) toward all eight different parties. In order to aggregate the party profiles, they were simplified to a sequential ordering of parties, and thereby the bar lengths of the party profiles have been omitted. We counted for each party how often it occurred at each place of the sequence (ranging from 1 = most liked to 8 = least liked). This is reflected in the information summarized in Figure 5.

All parties occur in all profiles, and therefore the totals are always 100 percent. Figure 5 basically allows an assessment of how popular a party is in the given profiles: the more often it ends up in the first or second position,

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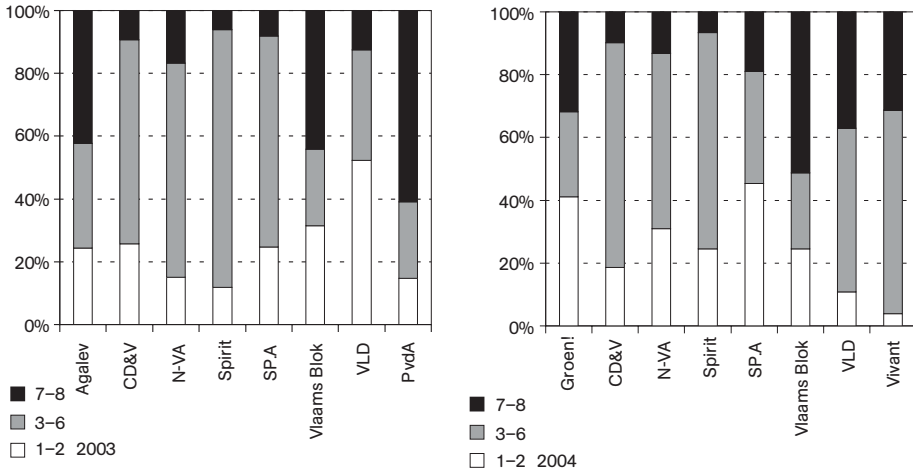
• Figure 5 Aggregated profiles

Note: Occurrences of every party on 1st-2nd rank (white): very popular; 3rd-6th rank (grey): liked nor disliked; 7th-8th (black): not liked at all.

the closer respondents get to the profile of this party. On the other hand, if a party often ends up on the seventh or eighth rank, this implies the party has some opponents among PPW users. For example, while the right-wing Vlaams Blok gets a high score among 32 percent of all users, it gets a low score among another 44 percent of all users in 2003 and 51 percent of all users in 2004. Compared to this, we see that the politically centred party Spirit gets a high score for only 12 percent, but also a low score in just six percent. While the Vlaams Blok polarizes public opinion, a middle of the road party such as Spirit has a completely different appeal.

Timing of PPW use

PPWs are usually launched six to eight weeks before election day. The use of the log files allows us to reconstruct the use of the PPWs on a daily base, and we can even show shifts with regard to the gender and education levels of PPW users. In 2004, the PPW was launched 40 days before the elections. In 2003 the PPW was launched only some days earlier. For easy comparison, for both datasets the numbers starting 40 days before the elections are shown. In both years, PPW use dropped to virtually zero on the day after the election. (Election day in both years was on a Sunday.) The figures on the left show the numbers for 2003, those on the right for 2004 (Figure 6).

In 2003, at D-28, the national television network VRT broadcasted its party profile show *Doe de stemtest* (*Take the Voting Test*). This seems to explain the rise at day 28 (D-28) in the first graph. In 2004, *De Standaard* ran a large front-page article on the launch of the PPW. This explains the high peak at

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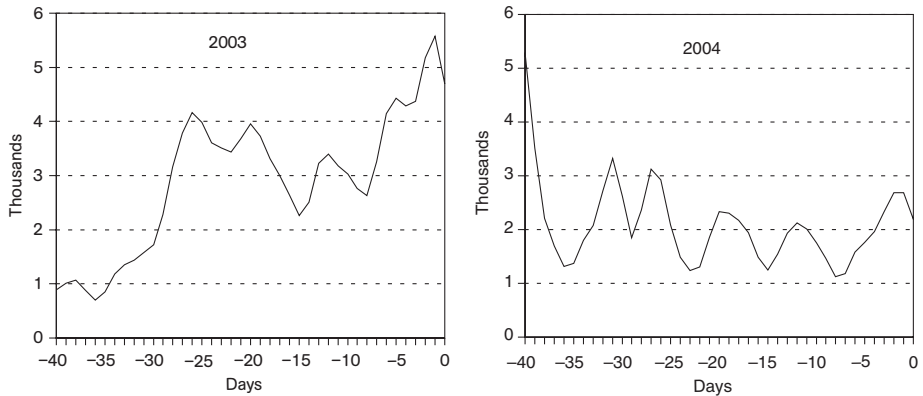
• Figure 6   Number of users per day, in the 40 days before election day

day 40 (D-40) in the 2004 graph. Although PPWs can be seen as a clear example of the use of new media in electoral campaigns, in practice their success still seems to depend on their exposure in the traditional media. Furthermore, there is a weekly rhythm in both graphs, showing more visitors during the week than at the weekends. This suggests that, despite the availability of broadband internet access in most households, most users in fact use their work- or school-related internet access to use the PPW. Moreover, a high increase is observed in the days just before the elections (falling again on the Saturday before election day).

Both in 2003 and 2004, the distribution at D-40 is more skewed than the distribution just before election day (Figures 7 and 8). Just after the website launch, users tend to be higher educated and generally male (more than 60%). Whereas these are the early adopters of the PPW, as time goes by the distribution grows more representative of the general population, especially of the population of internet users. The gender and educational level of the users changes noticeably over time, as can be seen in Figures 7 and 8, gradually becoming more representative of the population as a whole.

Voter volatility during the campaign

The fact that we have data on PPW users during every single day of the campaign allows investigation of the electoral volatility of PPW users in a detailed manner. Figure 9 lists how 'faithful' voters are to their initially preferred party (for clarity, the results for the 2004 elections are shown). It is possible to see, for example, how often the PPW users who had voted for the Liberals in 2003 receive that party on the first or second rank in 2004, on the third to sixth rank, or even on the seventh or eighth rank. The figures show that the extreme Right Vlaams Blok has extremely loyal voters: most of
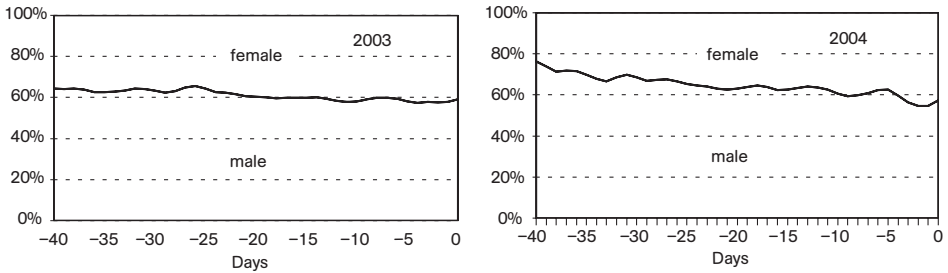
• Figure 7   Gender distribution among PPW users for 40 days leading to the elections
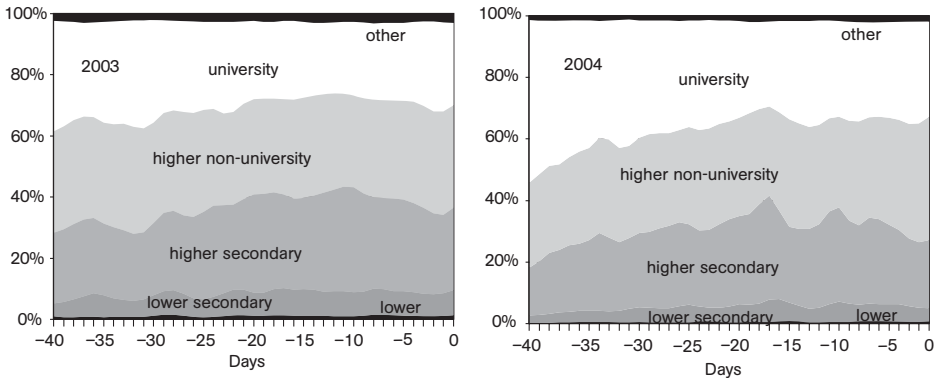

• Figure 8   Distribution of education level among PPW users for 40 days leaving to the elections

the PPW users who had voted for the party in 2003 still receive the party on the first or second rank. For example, of those who voted for Vlaams Blok in 2003, 86 percent receive Vlaams Blok again at the first or second rank in 2004 ('a voting advice for Vlaams Blok'). In general, for the more extreme parties (Agalev/Groen!, Vlaams Blok, PvdA), past voting behaviour is a better predictor of the party's rank in the party profile than for the centre parties (Spirit, CD&V, N-VA). Only 40 percent of those who said they voted for the Christian Democrats in 2003 receive advice in 2004 to vote for the CD&V on either the first or second rank.

   It is assumed that Figure 9 depicts a real transition in political preferences during the 2003–4 period. This viewpoint is based on the assumption that respondents report their previous voting preference in a sincere and reliable manner. If their 2003 preference no longer corresponds to the party option assigned to them by the PPW, it can be assumed that these respondents have changed their preferences and options in the period between the two elections.

   A common question in voter volatility research is when exactly voters change attitudes, and whether the political party campaigning has an effect on

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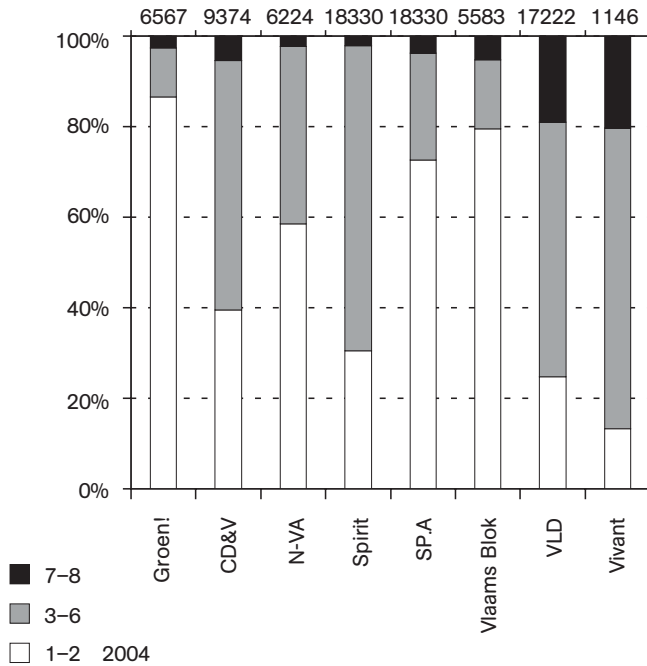
• Figure 9   Past voting behaviour and the profiles given to PPW users
Note: Bar = user reporting to have voted for that party during previous electrons.
Colours indicate how often that same party receives 1–2, 3–6, 7–8 ranking in the PPW.

these attitude changes (Erikson et al., 2004; Johnston, 1992; Romer et al., 2003). Do campaign events actually change the opinions of voters? Because the dataset contains detailed temporal information, this question can be investigated for the population of PPW users. Figure 10 can be constructed for each consecutive day of the campaign, since for every single day there is access to a sample of a few thousand PPW users. When Figure 10 is reconstructed for every single day of the campaign (not shown for lack of space; available from the authors), the most striking finding is the stability throughout the six weeks of the campaign. The average rank of the party that a person voted for during the last elections is almost constant throughout the entire 40-day period. However, if it is assumed that voters gradually make up their mind during the campaign (Romer et al., 2003), the distance between the party that is ranked first, and all the others, should gradually grow as election day gets nearer. It can be assumed that voters' opinions gradually converge or crystallize around the platform of their preferred party (Erikson et al., 2004). This hypothesis can be put to the test in the sample of PPW users by calculating the Shannon entropy of the party profile. Shannon entropy expresses the signal–to–noise ratio of a communication channel in a mathematically very elegant way (Shannon, 1948; Stefik, 1995). A noiseless,
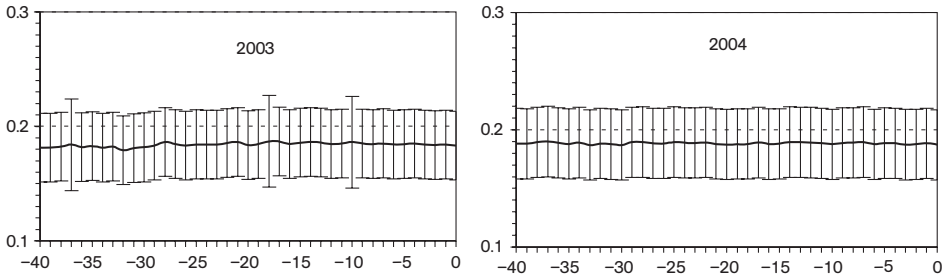
• Figure 10   Shannon entropy of the party profiles for every consecutive day during the campaign

Note: Range: 0.00 = absolute concentration to 1.95 = absolute fragmentation.

clear signal ('You should vote for party X') has a Shannon entropy of 0: this corresponds to the case where a PPW user fully agrees with one specific party, and fully disagrees with all others. The more unclear the signal becomes, the higher the Shannon entropy. In a system with eight possible classifications, a signal with only noise has an entropy score of 1.95. This corresponds to the case where the user has an equal distance to all parties, and might as well vote for any party.

If a crystallization process occurs among PPW users, this would imply that the Shannon entropy would erode during the campaign. However, this is not the case at all. The Shannon entropy score (Figure 10) shows a very straight line, implying that late PPW users are not more focused on their preferred parties than PPW early users. Late PPW users are no more partisan in their policy preferences than early users, and we do not find any support for the crystallization thesis, perhaps in fact the opposite.

CONCLUSION

Democratic theory often departs from the ideal of an informed voter, knowing what party agendas are and following the election campaign in an intense manner. In practice, the informed voter is a very rare species (Berelson et al., 1954). Nevertheless, the proliferation of interactive PPWs has made it very easy for citizens and voters, even in complex multiparty systems, to determine the distance between their own political preferences and the agendas of all political parties. Obviously, we do not know whether users pay attention to their party profile in deciding their party preference, or whether they use this as purely a form of entertainment. However, all the available information on PPW users, the timing of PPW use and the profile of the users suggests that this is certainly more than a game or a gimmick during an electoral campaign.

PPWs can be considered as the first phenomenon really to use the interactive and personalized capabilities of the internet for political purposes.

981

One of the most striking features of the Belgian PPW dataset is the massive number of people using the website. Even the most conservative estimate in this study arrives at more than 100,000 users, which is more than two percent of the total voting population. It must be remembered that these are not just people who happen to surf this website: they have answered at least 35 policy questions, and on average this will have taken them at least ten minutes of their time. So it can be assumed that these PPW users are genuinely interested in the election campaign. Second, it was observed that PPW users are very distinct from the general population with regard to gender (male), education (highly educated) and age (young). However, what is more important is that they are also younger, more highly educated and more often male than the average internet user in Belgium. So the traditional profile of internet users is strengthened further when investigating PPW users.

The fact that the profile of PPW users rapidly changes during the election campaign, hints at the possibility that this new interactive campaign instrument might be rendered mainstream quite rapidly. While early users of the PPW differ in their background characteristics from late users, they do not tend to differ with regard to their policy preferences: late PPW users do not have a distinct political profile compared with earlier PPW users. Obviously this is not a representative sample of the voting population at large, which would allow us some inference about campaign dynamics. There is some logic to the assumption that every single day, a few thousand voters are unsure and resort to the PPW. This would explain why PPW users' policy preferences do not become more chrystallized as the campaign progresses.

This unique dataset allows us a glimpse of how the policy preferences of a large number of voters are transformed during an election campaign. Thus far, most of the research on campaign dynamics has focused almost exclusively on political knowledge and the final vote decision. It is hard to avoid the notion that voters will gradually make up their minds about the party for which they are going to vote, since on election day they do have to make a final decision. However, what has not been investigated thus far is whether this electoral volatility also implies that voters are volatile with regard to their policy preferences. One can imagine that voters remain quite stable with regard to their policy preferences, but they have to make up their mind with regard to their party preference. The material analysed in this article on more than 200,000 Belgian voters is compatible with the hypothesis that election campaigns do not fundamentally alter voters' policy preferences, while they are compelled to make a decision about party choice. Whether or not this hypothesis offers an actual description of campaign dynamics cannot be determined using this dataset, as this would require a panel study of a representative sample of the electorate. But at least with regard to PPW users, it is possible to speculate that their basic political preferences are not all that easy to influence by electoral campaigns.

Acknowledgements

Notes

1 In June 2004, 4,018,293 voters took part in the elections for the Dutch-speaking Belgian members of the European Parliament (regional elections were held simultaneously with the European elections).

2 We comply with the American Sociological Association (1999) Code of Ethics, section 9.02 Disclosure:

> Sociologists disclose relevant sources of financial support and relevant personal or professional relationships that may have the appearance of or potential for a conflict of interest to an employer or client, to the sponsors of their professional work, or in public speeches and writing.

3 At run time, the IP address of the user was led through a secure hash function (MD5). This means that if the same IP shows up some time later, it is possible to detect that it is the same IP. However, from the hash value it is not possible to infer the IP itself, so the respondent's anonymity is secure.

4 The European Social Survey does not provide information on people under the age of 15, which explains the absence of children in the graph of the online population.

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