Party Profiles on the Web

An Analysis of the Log Files of Nonpartisan Interactive Political Internet Sites in the 2003 and 2004 Election Campaigns in Belgium

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Abstract

In recent years, nonpartisan "Party Profile Websites" (PPWs) have become hugely popular in various countries with multiparty systems, like Germany, Belgium and the Netherlands, sometimes even attracting 25 per cent of all voters. On these interactive websites, PPW users respond to a number of policy questions, and these answers are used to calculate the distance between their own preferences and party programs, resulting in an individualized "party profile". PPWs can be seen as one of the few innovations in election campaigning, fully exploiting the interactive opportunities created by the internet. Our analysis of the logfiles of the 2003 and 2004 Belgian PPWs demonstrate that PPW users tend to be highly educated, male and young, but as the campaigns progresses, these characteristics do become less outspoken. Following PPW users on a day to day basis shows that policy preferences of late users (the final days before the elections) are not more crystallized or outspoken than those of early PPW users (one month before the elections). We close with some speculations about what this finding might tell us about campaign dynamics.

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1 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. As Bimber and Davis (2003, 5-6) 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." Because of this interactive character, back in the 1990s the internet was heralded by some authors as bringing along a new, and more democratic form of political communication (Davis and Owen, 1998; Coleman, 1999; Morris, 1999). Since that time, however, most of the research on the political use of internet has resulted in dampening this initial enthusiasm (Margolis and Resnick, 2000). Ward, Gibson and Lusoli 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 US, 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 the high expectations surrounding the initial spread of internet. First of all, one of the main problems associated with political internet use remains the unequal access to internet. Although there are encouraging signs that this digital divide might have become less outspoken than it was just a couple of years ago, virtual inequality certainly remains a problem for those advocating reliance on the internet for political purposes (Mossberger et al., 2003). Second, although research on the consequences of internet use is still in a very preliminary stadium, thus far there are few indications that the introduction of the

new medium would effectively lead to politicizing new groups of the population, groups that did not participate fully before the arrival of the new medium. More likely, the reinforcement effect seems to prevail: groups that were already active, and already had access to political information, simply adopted a new medium to satisfy their political curiosity (Katz et al., 2001; Jennings and Zeitner, 2003; Stromer-Galley, 2004). Thus far, the reinforcement model seems a better way to understand the effects of internet use than the mobilization model (Norris, 2001). A third 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 that the medium is being used for the continuation and the enforcement of previously existing top-down communication patterns. Political parties, e.g., have become prolific users of the new medium, but in most cases their web pages are being used to disseminate information about candidates, campaigns and party programs (Gibson and Ward, 2000a; Gibson and Ward, 2000b; Norris, 2003; Tkach-Kawasaki, 2003). Various government offices have used the net to innovate the way they deliver services to citizens, in a process toward e-government (West, 2004). We do not wish to question the fact that these forms of innovation might lead to more performative and more effective forms of government, and therefore could enhance the legitimacy of political institutions. The conclusion however, remains valid that the introduction of the internet by 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 being used to intensify this flow of communication (Margolis and Resnick, 2000). In most instances, however, the interactive possibilities of the net are hardly being put to use.

This is especially true with regard to political campaigning. Here too, internet has quickly conquered part of the scene, and now has become an extremely important communication tool (Norris, 2002; Norris, 2003). Political parties and candidates for office are using the internet, by having a clearly established web presence, and by using emails for direct communication campaigns. Self-evidently, interactive features do play a role in the campaign use of internet, as, e.g., candidates engage in chat sessions with voters, or parties offer various on-line voting features. Again, however, we do not observe a structurally new form of communication emerging. Parties still go on disseminating information, and while in the past they used newspapers, leaflets, tele-

phone calls, cards and letters for this purpose, they now use electronic media to achieve their goals. The democratic and innovating character of the web obviously has not been fully realized in this case.

2 Nonpartisan Party Profile Websites (PPWs)

There is one way, however, in which the interactive possibilities of the web are being fully put to use during election campaigns, and this is the creation of various interactive "party profile" websites (PPWs). In recent years, these websites have proven to be hugely popular during various election campaigns, mainly in countries with multiparty political systems. Although there is some variation with regard to the precise technology being used, the principle on which these websites are based is always the same: the respondents fill in a questionnaire about their policy preferences and opinions, and by assigning weight factors to their responses, every respondent receives an individualized profile about which party manifesto is most closely associated with her or his 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. In the smaller letters of the web sites, however, usually it is mentioned that the party profile only offers an indication about the party manifesto that is closest to one's own preference. Some sites explicitly acknowledge that various other considerations (popularity of local candidates, traditional voting patterns, strategic voting, ...) might interfere with the actual advice given.

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

Thus far, however, these party profile websites 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 caught the attention yet of US or UK based scientists. Second, most of these party profile websites are being operated with commercial purposes. The technology behind the profile calculation is sold to, e.g., newspapers or television stations, offering the interactive device on their website. It is hoped for that exactly the interactive and individualized nature of the "advice" will draw internet surfers to the website of the organization. Because of these commercial considerations, both the producers of the profiles and the media organizations hosting them have been reluctant to offer access to researchers willing to investigate the new phenomenon. Third, users of these PPWs reveal quite some 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 party profile websites can play an important role in campaign dynamics. First, the numbers are impressive. The first Party Profile Websites appeared in the Netherlands, on the occasion of the elections for the Dutch parliament in 1998[1]. Back then, in the Netherlands, typically only universities, large companies and very few, rather privileged households had access to the internet. Nevertheless, the systems available then were accessed over 250,000 times, which corresponds to 2.5 per cent of the Dutch electorate[2]. In the 1999 elections in Belgium, the system "Wij kiezen partij voor u" was accessed by over 150,000 visitors, which corresponds to 4 per cent of the electorate in the Dutch language area of Belgium[3]. Since then, there have been Party Profile Websites in operation during all Dutch and Belgian election campaigns.

In the Dutch parliament elections of 2002, two competing systems, "Stemwijzer"[4] and "Kieshulp"[5] have been consulted respectively 2 million and 600,000 times, jointly corresponding to 25 per cent of the total electorate. The format has also been implemented in Germany and Switzerland. In Switzerland more than 30,000 profiles were given by the tri-lingual Swiss "Politarena"[6], and some 3,6 million profiles were given by the German "Wahl-O-Mat"[7] at the 2002 Bundestag elections (Hebecker, 2002). The German PPW is also available in Turkish, serving the large Turkish community in Germany. 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 journal, and it amounts to somewhat 4 per cent of the total electorate of Flanders[8].

In the pioneering countries of Party Profiles on the Web, Belgium and the Netherlands, both private and public television networks have started to offer similar internet features. In 2002 the Dutch commercial network SBS6 offered "Waar stem ik op?"[9] and in 2003 the Flemish public broadcasting corporation VRT offered "Doe de stemtest"[10]. The Belgian program did lead to some controversy, however, as some commentators accused it of simplifying politics, thus strengthening anti-political attitudes in the country (Deschouwer, 2004a; Fiers, 2004).

It should be noted that this plethora of systems actually stems from only three different origins. The Dutch Stemwijzer and the German and Swiss systems have been built under auspice of the Dutch Centre for Political Participation (IPP), a subsidiary of the Dutch Ministry of the Interior and Kingdom Relations. The television shows were all 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" have been developed by the department of Artificial Intelligence of the University of Groningen. Other developers have only very small market shares.

In countries like Germany, the Netherlands and Belgium, not only voters have discovered the importance of PPWs; political parties increasingly pay attention to this new format. There is some evidence that the parties themselves have become rather sensitive for the campaign effects of these party profiles. E.g., during the 2003 campaign, the PPW of the public broadcasting corporation VRT revealed that a massive majority of the users was in favor of restricting the rules with regard to the release of felons before finishing their complete term in prison. As an immediate reaction to this news, the party president of the Socialist Party, Mr. Steve Stevaert, tabled a proposal to end this regulation, contrary to his long-standing party manifesto. Both in 2003 and in 2004 the centrist Christian Democratic Party strongly protested the proliferation of PPWs, with as its main argument that it would lead to a populist approach toward politics. Furthermore, it was feared that the format would lead to a polarization of the political debate, and it was assumed that this would disadvantage the Christian Democrats, which are often seen as typically defending a middle of the road solution to various policy issues.

At least in multi party systems, therefore, PPWs have become an important element of campaign dynamics. The obvious appeal of PPWs can be explained, partly by its entertainment

element, 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 nonpartisan PPWs also implies that is becomes 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 also be used in a printed format, but this does not seem very appealing. At least we do not know of any instance where the same kind of procedure has been undertaken in printed format. If the promise that the new medium would lead to qualitatively new patterns of communication has been fulfilled somewhere, this is with regard to PPWs.

3 The study of PPWs

As we mentioned already, however, for commercial reasons most PPW hosts are not likely to offer information on the use of these websites, but fortunately we did manage to get access to the log files for the 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, in 2004 the regional parliaments were chosen. Except for some very small groups, exactly the same parties participated in both election campaigns, without any obvious differences because of the different scale of the elections, so we can assume it is safe to compare both campaigns. Another consideration is that the information that is being given by the PPW users, is protected by privacy rules, and therefore cannot be communicated to third party researchers. The newspaper was willing to make this information public for research, since both of us were involved in the project, providing consultancy and advice both for the political as for the methodological/statistical expertise necessary to operate the site.

We fully realize that studying an initiative were one has been actively involved in as a scientific consultant, creates serious deontological challenges. The risk is clearly present that researchers will not be critical and detached, and that they will show a tendency to be overly optimistic about the potential of the website (Diener and Crandall, 1978; Romm, 2000). We are aware of

this risk, and therefore we will not go into the 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 have argued. In this discussion, we are clearly biased, since we do believe in the potential of PPWs, and therefore we would prefer not to engage in this discussion while presenting our data. 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 of this article can judge for themselves whether the information contained in this article might be biased in some way[11].

It is clear however, that without some form of involvement of the researchers, this unique data set would never be available for scientific research. First, PPW hosts have no incentive at all to share this information with other actors, in what is, after all, a competitive market. In this case, the newspaper De Standaard is not interested in divulging the profile of the visitors to its internet site to competing journals. Furthermore, opening up these data files to external researchers runs against the basic rules of conduct with regard to privacy of internet use. The respondents using the PPW reveal a lot of information about their policy preferences and their positions, and they only do so under the strict understanding that these data will never be given to third party users. Given these privacy rules, therefore, the PPW host is not even allowed to share the data set with independent researchers.

Given 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 up front our prior involvement in this project, we give the discerned reader all possible information, allowing her/him to be highly critical of any personal point of view that we might defend in this article (American Sociological Association, 1999). Most of the information we use in this article is rather neutral, and it could not have any effect on the project itself. Therefore, we do feel safe in presenting this material to an international scientific audience.

4 The "Wij kiezen partij voor u" PPWs in 2003 and 2004

A Party Profile Website is typically launched eight to six weeks before election day, and the PPW host usually wants to attract media attention with this website. This media attention includes press conferences, articles in newspapers, TV shows, ads and commercials on the radio. Politicians and opinion leaders are asked to fill in the questionnaire, to share the resulting profile with the audience, and to tell the audience whether they think the profile reflects their personal opinion. Also, in many schools whole classes take their party profile as a part of their educational program[12]. In this way the number of visitors increases in course of the upcoming elections. In the days just before the elections, the number of daily visitors reaches its top.

A Party Profile Website works by asking the user her/his 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 Party Profile Websites choose to visualize this list in a bar graph.

Gathering the opinion of the user is done by confronting the user with a number of statements in the form of Likert items. For every statement, the user can choose between "fully agree", "generally agree", "generally disagree" and "fully disagree" but the user may also choose to skip the statement. Also, the user can fill in whether s/he finds the subject of the statement very important, or unimportant. Some examples of recently used statements are:

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

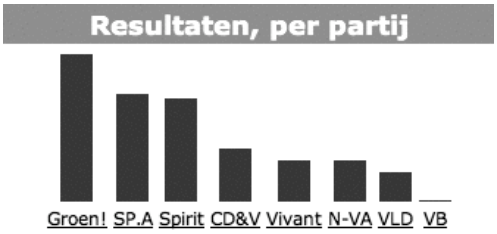

Figure 1: Typical output of a PPW, with Belgian political parties aiming at the Dutch speaking part of Belgium. The example user clearly likes Groen!, and opposes VB. See text for more information on the Belgian parties.

After the user has given her/his opinion on these statements, the software program computes the fit with the position for each political party. The models used to make this calculation are manually made by the developers of a PPW. Taking all fitnesses together, the computer shows a graph to the user, which may look like Figure 1. The figure also list the main political parties in Flanders: Groen! (the new name for the Green party Agalev, obtaining 4 per cent of the vote in 2003); SP.A (social democrats, 25%), Spirit (progressive nationalist, 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%).

Figure 1 is of course an example. Had the user given different ratings to the statements, the order of the bars and the sizes of the bars would have been different, to reflect the opinion of the user. Figure 1 can best be interpreted as follows:

> "The user fits very well into the party Groen!, and both SP.A and Spirit make a good second and third choice. Other parties don't really fit to the user's opinion. The user clearly opposes to VB."

Users have hardly any problem interpreting the figures given to them[13].

5 The users of "Wij kiezen partij voor u"

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 just 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 outspoken as ever more households acquired internet access (Katz et al., 2001). In Belgium, too, residential access to internet has spread at an astonishing speed. In March 2004, the Belgian association of internet providers counted 1,592,000 residential internet connections, which means that almost 40 per cent of all Belgian households have access to the internet. What is even more important, 68 per cent of all residential connections are based on broadband technology, where subscribers usually pay a flat fee every month. This implies that, contrary to the earlier phone-based connections, there are no additional costs for the time being used to surf the internet (ISPA, 2004). Given these rapidly changing market and technology conditions, the question becomes all the more relevant to find out who are the PPW users.

Measuring the precise number of distinct people visiting a website is a very difficult, if not unsolvable problem. When counting the number of visitors, website owners have a tendency of being overly optimistic. The wish to obtain a high visitor count is incompatible with the desire to know for sure whether all data samples represent sincere first-time users. In order not to be accused of boosting the number of visitors to the "Wij kiezen partij voor u" PPW, we have chosen the most conservative approach to obtain a visitor count, by eliminating all questionable data points. Our main problem is that technically it is impossible to make a distinction between someone who fills in the questionnaire twice (e.g., to verify what is 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 safe side, we simply eliminated all multiple entries originating from the same computer.

For each given profile, the following information was collected:

1. The answers and weights the user has given to the questions,
2. The answers given on some socio demographical questions (the user was allowed to skip all of these questions): age, education level, gender, voting behavior during the previous elections,
3. The Party Profile given to the user,

4. The date and time of giving the Party Profile,

5. The anonymized IP address[14] of the user, and if the user visited the site through a web proxy, appended with the anonymized IP of the proxy server,

6. The country code of the IP address[15] of the user, and if the user visited the site through a web proxy, the country code of the proxy server,

7. Whether the web browser of the user accepted a permanent cookie,

8. The temporary *session cookie* of the web browser of the user[16].

The procedure of filtering our data points was a series of reduction steps. We first eliminated all points except the first occurrence of each anonymized IP, either with permanent or temporary cookies. Second, all points originating from outside Belgium were eliminated, and all points where fewer than 35 out of 42 questions were answered. This procedure resulted in almost roughly one half of all points being eliminated, and ensuring that the remaining points represented unique users, people filling in the questionnaire for the first time. This number is very reasonable given that quite some users, after getting their initial Party Profile, like to experiment around with the system. In the remaining set, we have searched for anomalies which could point to users trying to cheat or influence the system (a prominent problem in online voting procedures) but we found no indication whatsoever in this direction. We believe this is due to the very strict filtering we applied[17]. Furthermore, since no aggregate results are being published, no party could really have an interest in manipulating the figures.

Year	2003	2004
Total users	213,477	156,633
Effective users in analysis	119,832	85,979
% used data points	56,1%	54,9%

Table 1: Numbers of users of the "Wij kiezen partij voor u" PPWs in 2003 and 2004. In the remainder of this article, only the "effective users" will be analyzed.

Table 1 summarizes the number of given Party Profiles, and the number of Party Profiles that we consider as genuine profiles given to unique website visitors. It cannot be assumed the 2003

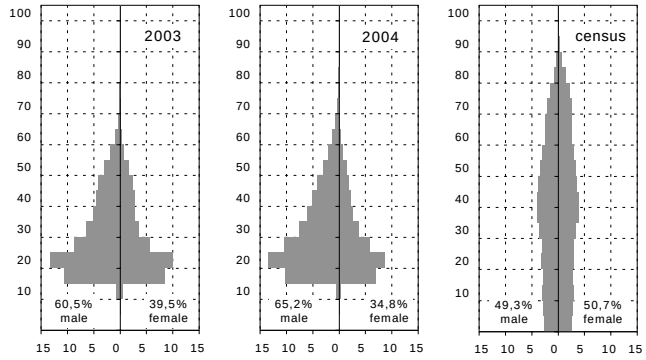

Figure 2: Age (vertical) and gender (horizontal) distribution of the users of the 2003 and 2004 PPWs. For comparison, the same information on the Flemish population is shown, based on census data. n= 119,832 in 2003 and 85,979 in 2004.

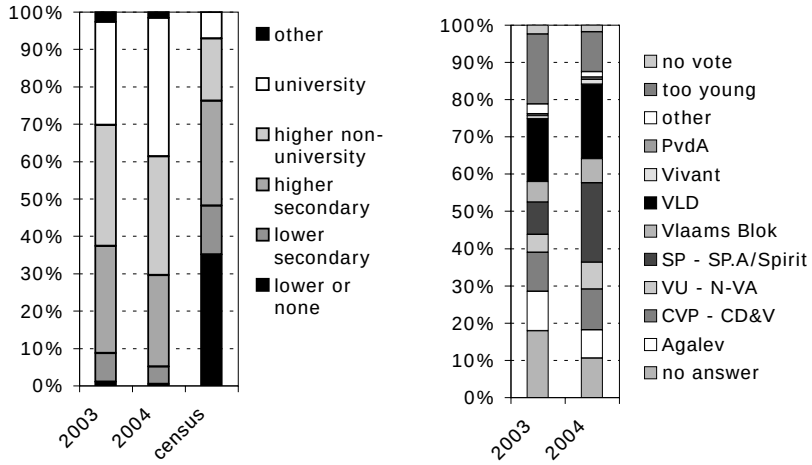

Figure 3: The education level distribution compared with census data (left figure) and the past voting behavior (right figure) of the users of the 2003 and 2004 PPWs. The question on previous voting behavior was included in the PPW. n= 119,832 in 2003 and 85,979 in 2004.

and the 2004 groups largely overlap, especially because the 2003 system was advertised through partially different media than the 2004 system.

First, we sketch the profile of the PPW users, using age, gender and education level as background variables, comparing these characteristics from information obtained from census data (Nationaal Instituut voor de Statistiek, 2003; Nationaal Instituut voor de Statistiek, 2002). With regard to age, a first observation is a huge overrepresentation of young internet users: the 15 to 29 age bracket provides over half of all users, both in 2003 as in 2004. The use of the PPW declines

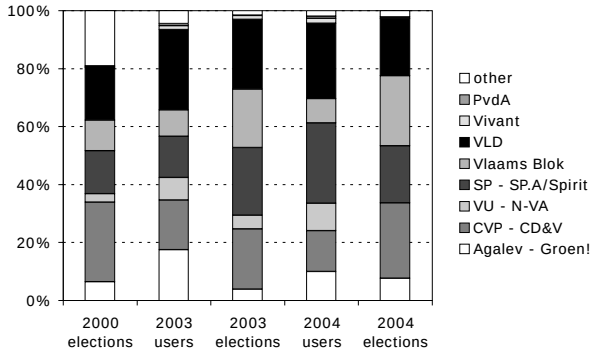

Figure 4: Voting behavior of the users compared with the election results. The column "2003 users" reflects what the users of 2003 said they had voted for in 2000; the column "2004 users" reflects what the users of 2004 said they had voted for in 2003. Elections 2000, 2003 and 2004 are election results for the Dutch speaking part of Belgium.

dramatically over 50, while we also observe a rather limited number of users below the age of 15. Despite the fact that quite some schools use PPWs in their classes, it is clear that schoolchildren do not provide the bulk of all PPW users (Figure 2). Second, the political use of internet tends to remain rather male-dominated with men providing well over 60 per cent of all PPW users. Also with regard to the education level, some of the earlier findings on political internet use are only confirmed, with a very strong dominance of respondents having pursued higher education. The fact that the 2004 sample is 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 website of the *Standaard* newspaper, which tends to cater to a highly educated audience. But even so, also for the 2003 PPW, the observation remains valid that highly educated users are strongly overrepresented in the sample (Figure 3).

Finally, in 2003 82 per cent of all users provided us with information on the party they had voted for during the previous elections, and in 2004 this was even 90 per cent[18]. In Figure 4, we compare these data with the actual election results in 2000, 2003 and 2004 (Directie Verkiezingen, 2004). This table, however, does not contain any surprises: most parties are represented in the sample. Major exceptions are the extreme-right Vlaams Blok (and here we know that they tend to recruit mainly lowly educated voters) and the Christian-Democrats (CD&V), who tend to attract older voters. Given the fact that our users where younger and highly educated, this can be

considered as a relatively normal distribution: liberals, socialists, greens, and moderate Flemish nationalists were all clearly represented, roughly in line with their real electoral strength[19].

We can summarize this overview of the socio-demographic profile of the PPW users by saying that the users tend to be young, male and highly educated. Their voting preferences are in line with these background variables, with a preference for green and socialist parties, and a clear underrepresentation of extreme right and Christian democratic parties.

6 The Advices Given to the Users

The next question we want to answer concerns the party profiles that actually have been given to the PPW users. Each user has been given a personal party profile, as we have shown in the example above. Summarizing the individual advices to groups of users is a nontrivial task, because the user receives information not just about one party, but s/he gets information on the distance toward all eight parties. So, every user really receives an individual ranking of eight different parties. For aggregating the party profiles, we simplify a party profile to a sequential ordering of parties, and thereby omit the bar lengths of the party profiles. In each party profile, a party has a place in the sequence. E.g., the preferential party receives the first ranking, etc., until we arrive at the eight ranking for the least liked party. We count for each party how often it occurs at each place of the sequence. This gives us the information, summarized in Figure 5.

All parties occur in all profiles, which is why the totals always sum up to 100%. This way of showing the aggregated profiles, allows us to look into details of the given profiles. For example, while the right-wing Vlaams Blok gets the highest score among 17% of all users, it also gets the lowest score in another 31% of all users in 2003 and even 42% of all users in 2004. Compared to this, we see the politically centered party Spirit getting only a few per cent in place 1, but also just a few per cent in place 8. While the Vlaams Blok seems to polarize public opinion, a middle of the road party like Spirit has a completely different appeal. More in general, we see that political parties that are at the extreme sides of the political spectrum, have low fractions of people getting these parties at the middle of the scale (places 3 up to 6). This is to be expected, since the more extreme a party is, the stronger voters agree or disagree with the opinions of

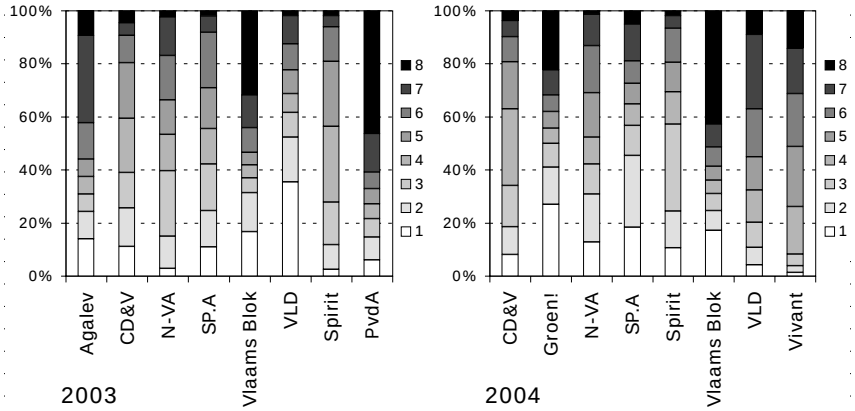

Figure 5: Aggregated party profiles for the 2003 and 2004 PPWs. For each political party, it is shown how often it occurs at each rank in the advice. The more often a party gets a number one ranking, the more it "popular" it is. Since this is a sequential order, all parties are given in all profiles, from 1st rank to 8th rank.

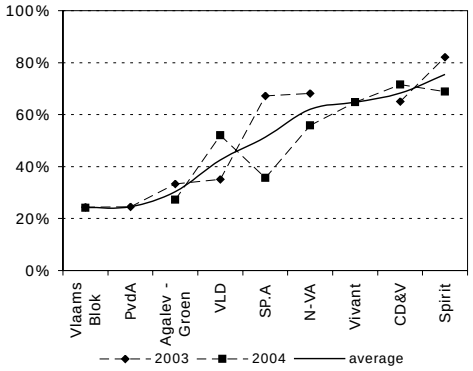

Figure 6: Extreme and mainstream parties. Graph shows for each political party, how often it is assigned a middle ranking (places 3-6) in the party profile. Extreme parties will more often than mainstream parties be assigned rankings 1,2,7 or 8. Party that often obtain the middle ranks, clearly do not polarize the electorate in either direction. Rankings are given for 2003, 2004 and the average of these two years.

such a party. If we plot the fraction of PPW users getting a party in the middle of the profile scale against the parties, we see this effect even more clearly (Figure 6). The graph describes the extremity of Belgian political parties. Vlaams Blok, PvdA and Groen! are the most extreme parties; Spirit, CD&V and N-VA can be considered as the most central parties, and SP.A and VLD reside somewhere in between (Deschouwer, 2004b). The place of Vivant is hard to interpret, since it is (almost) a one-issue party.

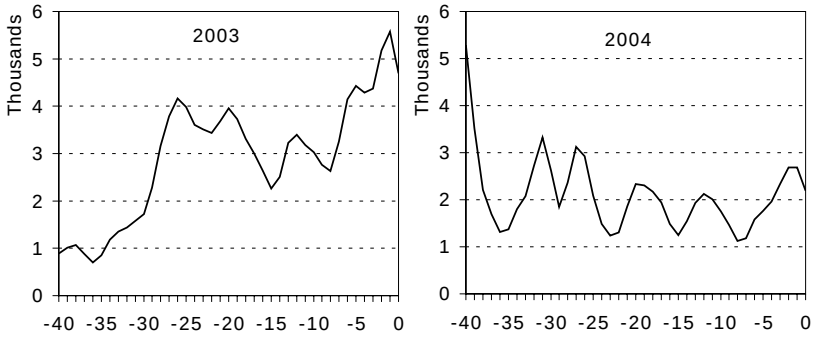

Figure 7: Numbers of users per day, counted from 40 days before the elections onto election day. The figures for the 2003 PPW are shown on the left, and for the 2004 PPW on the right. n= 119,832 in 2003 and 85,979 in 2004.

7 The Timing of PPW use

It is interesting to know when voters actually visit a PPW, because it tells something about the moment in time when people are interested in knowing their political profile. Also, these figures may be different for different parts of the populations. We will show the number of users per day, and the distribution over gender and education per day. 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 we show the numbers from 40 days before the elections. In both years, the use of the PPW dropped to virtually zero on the day after the election. Election day is in both years on a Sunday. The left figures show the numbers for the year 2003, the right ones for the year 2004 (Figure 7).

In 2003, at D-28, the national television network VRT broadcasted its party profile show "Doe de stemtest". This seems to explain the rise at D-28 in the first graph. In 2004, De Standaard had a large front-page article about the launch of the PPW. This explains the high peak at D-40 in the second graph. Furthermore, we see a weekly rhythm in both graphs, showing more visitors during the week than in the weekends. Moreover, we observe a high increase in the days just before the elections (going down again on the Saturday before election day).

Both in 2003 and 2004, the distribution at D-40 is more skewed than the distribution at D-0. Just after the launching of the website, users tend to be higher educated, and generally male (well over 60%). Whereas these are the early adopters of the PPW, as time goes by the distribution

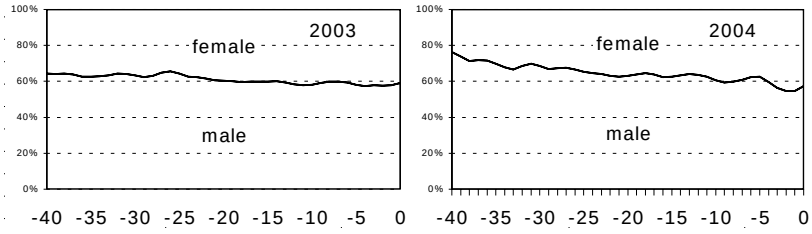

Figure 8: Distribution of gender within the PPW users per day. Gender distribution is calculated for every day from 40 days before the election.

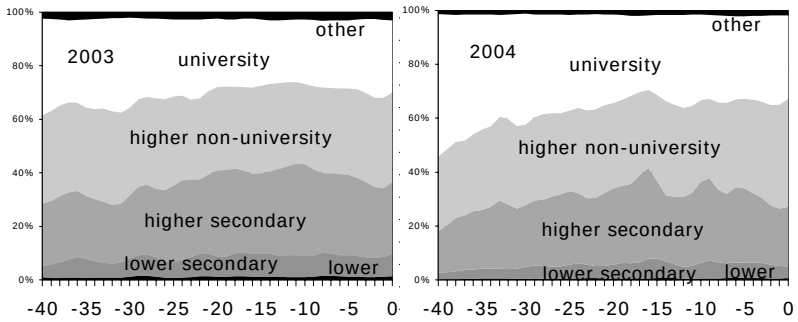

Figure 9: Distribution of education level within the PPW users per day. Education level is calculated for every day from 40 days before the election.

grows more representative of the general population. In 2004, the users at time point D-40 differ even more strongly from the general population than at the same time in the 2003 campaign. This may partially be explained by the fact that in 2004 the PPW was offered exclusively by the daily De Standaard, whose readers on average have a higher educational level than the general audience.

The gender and educational level of the users changes noticeably over time, as can be seen in the graphs, gradually becoming more representative of the population as a whole (Figures 8 and 9). On the other hand, if we plot age and political preference on the time scale, we see no clear changes occurring during the campaign (data not shown).

8 Voter volatility during the campaign

Because we obtained information about the political preference of the PPW users during the last elections, we can ascertain whether the opinion of voters in the current campaign correlates

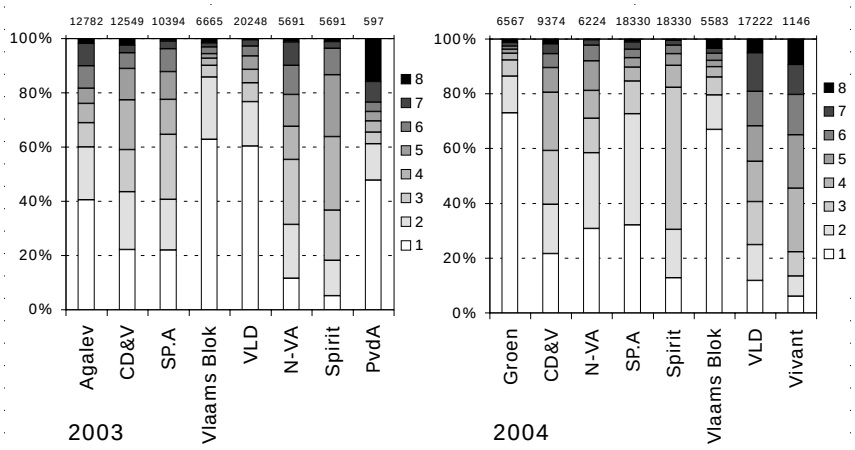

Figure 10: Relation between past voting behavior and the profiles given to the users. The bars represent all PPW users who said they voted for that party during the previous elections (2000 in the 2003 PPW; 2003 in the 2004 PPW). Absolute numbers of that electorate are shown on top of the bar. The colors represent the percentage of those voters, obtaining their initially preferred party again at the n-th ranking of their individual profile. A high percentage of number 1-rankings indicates that the party has loyal voters.

with their voting behavior during the last election. For this purpose, we have plotted for each political party, the rank distribution of the voters who said they voted for the party during the last elections. This is shown in Figure 10. The bars represent the percentage of voters for a specific party (in the previous elections), who obtain a voting advice for that same party when they use the PPWs. For example, we see that of those who voted for Vlaams Blok in 2003, in 2004 67% gets Vlaams Blok again at the first rank ("a voting advice for Vlaams Blok"). We see, as expected, that for the more extreme parties (Agalev/Groen, Vlaams Blok, PvdA), past voting behavior is a better prediction of the party's rank in the party profile, than for the more central parties (Spirit, CD&V, N-VA). We can observe, e.g., that only 22% of those who say they voted for the Christian Democrats in 2003, in 2004 again get the advice to vote for the CD&V. Again, the volatility pattern is quite clear: we observe less volatility among the voters for "extreme" parties (who have but one direction to leave their initial party) and a higher volatility among the centre parties, where voters can exit their initial preference, both to the left as to the right.

With our datasets we also have a very detailed description of the opinion of the PPW users on a day-by-day basis. On every single day of the campaign, more than 1,000 first time users obtained

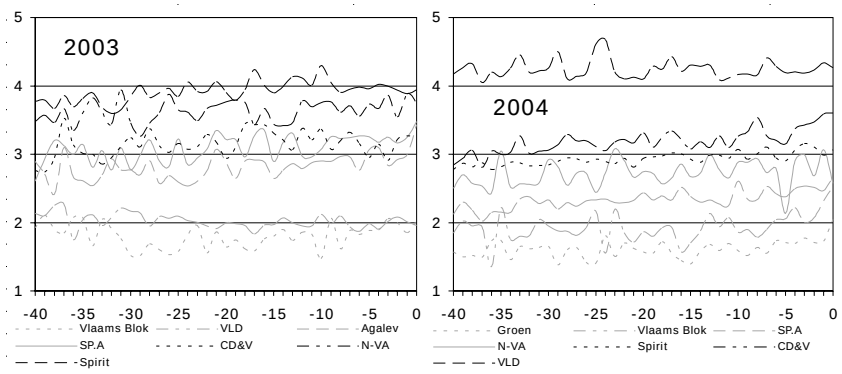

Figure 11: Average rank of the previously preferred party, for all electorates, spread per day. Ranks range from 1 (closest fit) to 8 (worst fit). Lines represent PPW users indicating they had voted for that party during the previous elections. Entries are daily averages for all 40 days before the elections.

an individualized party profile. This information allows to ascertain in a very fine-grained way when exactly voter volatility among the PPW users is strongest during the campaign. In this way, we can shed new light on the hotly debated topic about when exactly, and to what extent, voters change their opinion during election campaigns (Norris et al., 1999). While some authors assume that this is a continuous process, others tend to ascribe more influence to sudden changes, often occurring in the days just before the elections. There is also some debate about the question whether these shifts in public opinion should be seen as just transient and superficial phenomena, or whether they really reflect more substantial transformations.

In Figure 11, we have plotted for the electorate of each political party, the average rank of the initially preferred party in the individualized profile, against time. For example, those who said they voted VLD during the 2000 elections, on average received the VLD on the 2nd rank, with only minor variations in time during the campaign. Vlaams Blok voters tend to get their initial party at a very high rank (i.e. close to 1), which is a clear indication for the stability of this electorate. On the other extreme, Spirit in 2003 and the VLD in 2004 clearly have but lukewarm supporters, as these parties on average only get a 4th ranking among those who had voted for that party during the previous elections.

We can observe in Figure 11 that the average rank slowly increases over time, which suggests that in course of the campaign, voters do slowly diverge from the party they voted for during the

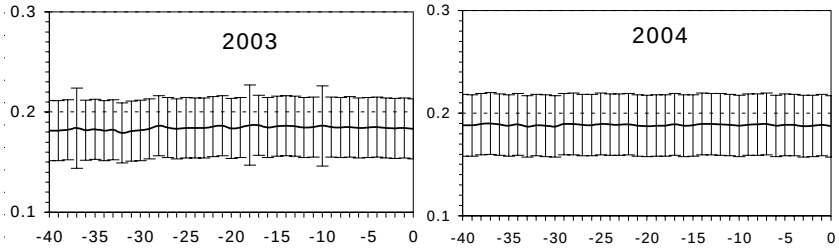

Figure 12: Average Shannon entropy of the given party profiles, per day. Shannon entropy measurement expresses how fragmented an individual voting profile is, ranging from 0.0 (absolute concentration) to 1.95 (absolute fragmentation). Average Shannon entropy scores are calculated for the profiles given on all 40 days before the elections.

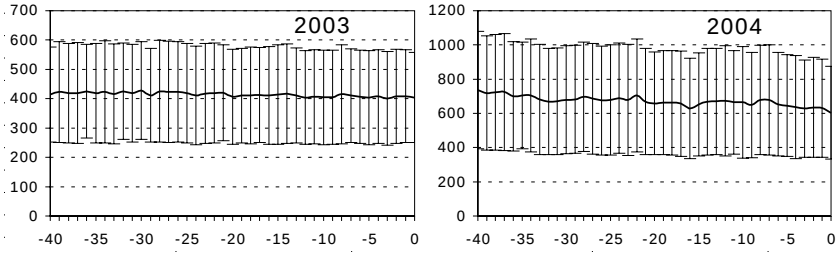

Figure 13: The average distance between the most favorite and least favorite party, in internal units, per day. This difference expresses how much the voter likes the best matching party over the worst matching party. The units of the 2003 PPW and 2004 PPW are not interchangeable.

last elections. This divergence increases during the last few campaign days. Moreover, we see that the rate at which voters diverge from their party is approximately equal for all parties, though the absolute divergence is clearly related to the extremity of the party.[20]

The only conclusion to be drawn from Figure 11 is that those who use PPW late in the campaign tend to be slightly more volatile than those who use PPW early on in the campaign. This trend can be explained in two different ways. First, we might assume that PPW users simply switch parties, by moving from party A to party B. If that is the case, we would see that their initial party simply looses ranks, only to be replaced by another party. The second possibility is that late PPW users are not just more doubtful about their initial party, but that remain doubtful in general, not leading to clear preference for an alternative party. In that case, we should observe that the differences in proximity between the various parties become less outspoken as the campaign progresses. To ascertain which of these scenarios is most likely, we can no longer suffice with an

analysis of the ranking of the parties, but we also have to incorporate the distances between the parties. If only one party is very close to the preferences of the PPW users, and all others are at quite some distance, we would still get the same ranking of the parties as if all parties where more or less at the same distance. So in our next analysis, we turn to the intensity of the preference of the PPW user. We can do this in two different ways.

First, we calculate the Shannon entropy measurement for the party profiles given on every single day. The Shannon entropy expresses how fragmented the voting profile is, that is being given (Shannon, 1948; Stefik, 1995). In this specific case, the Shannon entropy score could vary from 0.00 (if the PPW users fully agreed with one specific party, and fully disagreed with all others) to 1.95 (if the PPW user obtained an equal distance to all parties involved). Or to put it differently: the lower the Shannon entropy score, the more outspoken the party preference of the PPW user.

A second way to ascertain whether PPW users become more outspoken as the campaign progresses, is to look at the lengths of the *unscaled* bars in the party profiles: the difference between the highest and the lowest bar expresses how much the voter likes the best matching party *over the worst matching party.*[21] Figures 12 and 13 show the variations for both scales during the campaigns under investigation. It is quite striking that the Shannon entropy score shows a very straight line, implying that the late PPW users are not more focused on their preferred parties than the early users of the PPW. The distance between the most liked and the most disliked party, on the other hand, slowly seems to be diminishing if the campaign progresses. Thus, if any effect is to be established from this data, it is that PPW users tend to become *less* outspoken in course of the campaign. Late PPW users are no more partisan in their policy preferences than early users.

9 Conclusion

Democratic theory too often departs from the ideal image of the informed voter, knowing what party programs are and following the election campaign in an intense manner. In practice, the informed voter is a very rare species indeed (Berelson et al., 1954; Delli Carpini and Keeter, 1993).

Nevertheless, the proliferation of interactive Party Profile Websites 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 programs of all political parties. At least in the Netherlands, almost one quarter of all voters actually use this opportunity. Self-evidently, we do not know whether users pay attention to their party profile in deciding about their party preference, or whether they use this as purely a form of entertainment.

Nevertheless, Party Profile Websites can be considered as the first phenomenon that really uses the interactive and personalized capabilities of the internet. This new instrument has never been studied before, and we have access to a unique dataset which allows social scientists to investigate a host of general questions. One of the most striking features of the Belgian PPW data set is self-evidently the massive number of people using the website. Even our most conservative estimate arrives at more than 100,000 users, which is more than 2 per cent of the total voting population. It has to be remembered that these are not just people who happen to surf on this website: they have answered at least 35 policy questions, and on average this will have taken them at least 10 minutes of their time. So we can assume that these PPW users are genuinely interested, and speaking only on a quantitative level, this might already mean that PPWs have become one of the most important tools in an election campaign. Second, we observe that PPW users are very distinct from the general population, with regard to gender (male), education (highly educated) and age (young). So the traditional profile of internet users is even strengthened when investigating the PPW user. Whether this very distinct profile of the PPW user is due to the instrument as such, or should be considered as an artifact of these specific Belgian PPWs, is something that will become clear only later, if comparable datasets of other PPWs are open for investigation.

The fact that the profile of PPW users rapidly changes during the election campaign, however, 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. Self-evidently this is not a representative sample of the voting population at large, which would allow us some interference about campaign dynamics. There is some logic to the assumption that every single day, a few thousand of voters are

in doubt, and therefore they resort to the PPW. This would explain why the policy preferences of the PPW users do not get more outspoken as the campaign progresses. For the first time, however, this dataset allows us a glimpse on how policy preferences of a large number of voters are being transformed during an election campaign. Thus far, most of the research on campaign dynamics has focused almost exclusively on political knowledge and on the final vote decision. It can hardly be avoided that voters gradually make up their mind about the party on which they are going to vote, since, on election day, they finally have to make a decision. What has not been investigated thus far, however, 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 that they have to make up their mind with regard to their party preference. The material we have analyzed in this article, on more than 200,000 Dutch-speaking Belgian voters, is quite compatible with the hypothesis that election campaigns do not fundamentally differ voters' policy preference, while they are compelled to make a decision about party choice.

Whether or not this hypothesis offers an actual description of campaign dynamics, of course, 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 the highly educated, and therefore a-typical PPW users, we might speculate that their basic political preferences are not all that easy to influence by electoral campaigns.

References

American Sociological Association (1999). *Code of Ethics*. Washington, D.C.

Berelson, B. R., Lazarsfeld, P., and McPhee, W. N. (1954). *Voting: A Study of Opinion Formation in a Presidential Campaign*. University of Chicago Press, Chicago.

Bimber, B. (2001). Information and Political Engagement in America: The Search for Effects of Information Technology at the Individual Level. *Political Research Quarterly*, 54(1):54–68.

Bimber, B. and Davis, R. (2003). *Campaigning Online. The Internet in U.S. Elections*. Oxford University Press, New York.

Bundeszentrale für politische Bildung (2004). *Handreichungen für Lehrerinnen und Lehrer*. Bonn.

Coleman, S. (1999). Can the New Media Invigorate Democracy? *Political Quarterly*, 70(2):16–22.

Dalton, R. and Wattenberg, M., editors (2000). *Parties without Partizans*. Oxford University Press, Oxford.

Davis, R. and Owen, D. (1998). *New Media and American Politics*. Oxford University Press, New York.

Delli Carpini, M. X. and Keeter, S. (1993). Measuring Political Knowledge: Putting First Things First. *American Journal of Political Science*, 37:1179–1206.

Deschouwer, K. (2004a). Doe de stemtest wél. *De Tijd*.

Deschouwer, K. (2004b). Political Parties and Reactions to the Erosion of Voter Loyalty in Belgium. In Mair, P., Müller, W., and Plasser, F., editors, *Political Parties and Electoral Change*, pages 179–206. Sage, London.

Diener, E. and Crandall, R. (1978). *Ethics in Social and Behavioural Research*. University of Chicago Press, Chicago.

Directie Verkiezingen (2004). *Belgische Verkiezingen sinds 1830*. FOD Binnenlandse Zaken, Brussels (`http://www.elections.fgov.be/`).

Fiers, S. (2004). Doe de stemtest (niet). *De Tijd*.

Gibson, R. and Ward, S. (2000a). British Party Activity in Cyberspace: New Media, Same Impact? In Gibson, R. and Ward, S., editors, *Reinvigorating Democracy? British Politics and the Internet*, pages 107–128. Ashgate, Aldershot.

Gibson, R. and Ward, S., editors (2000b). *Reinvigorating Democracy? British Politics and the Internet*. Ashgate, Aldershot.

Hebecker, E. (2002). Experimentieren für den Ernstfall. Der Online-Wahlkampf 2002. *Aus Politik und Zeitgeschichte*, pages 49–50, 48–54.

Hooghe, M. and Stouthuysen, P. (2001). Het gebruik van het Internet door de Vlaamse politieke partijen. *Res Publica*, 43(4):507–527.

ISPA (2004). *20ste marktonderzoek: 31 maart 2004*. Internet Service Providers Assocation, Brussels (`http://www.ispa.be`).

Jennings, K. and Zeitner, V. (2003). Internet Use and Civic Engagement. A Longitudinal Analysis. *Public Opinion Quarterly*, 67:311–334.

Johnston, R. (1992). Party Identification and Campaign Dynamics. *Political Behavior*, 14(2):311–331.

Katz, J., Rice, R., and Aspden, P. (2001). The Internet, 1995-2000, Access, Civic Involvement, and Social Interaction. *American Behavioral Scientist*, 45(3):405–419.

Kaye, B. K. and Johnson, T. J. (2002). Online and in the Know: Uses and Gratifications of the Web for Political Information. *Journal of Broadcasting and Electronic Media*, 46:54–71.

Margolis, M. and Resnick, D. (2000). *Politics as Usual. The "Cyberspace Revolution"*. Sage, Thousand Oaks.

Morris, D. (1999). *Vote.com*. Renaissance, New York.

Mossberger, K., Tolbert, C., and Stansbury, M. (2003). *Virtual Inequality. Beyond the Digital Divide*. Georgetown University Press, Washington, D.C.

Nationaal Instituut voor de Statistiek (2002). *Enquête naar de arbeidskrachten 2002*. Nationaal Instituut voor de Statistiek, Brussels (`http://statbel.fgov.be/downloads/lfs2017-2003_nl.xls`).

Nationaal Instituut voor de Statistiek (2003). *Bevolking en huishoudens Totale en Belgische bevolking*. Nationaal Instituut voor de Statistiek, Brussels (`http://statbel.fgov.be/pub/d2/p201y2003_nl.pdf`).

Norris, P. (2001). *Digital Divide. Civic Engagement, Information Poverty and the Internet Worldwide*. Cambridge University Press, Cambridge.

Norris, P. (2002). Campaign Communication. In LeDuc, L., Niemi, R., and Norris, P., editors, *Comparing Democracies 2*, pages 127–147. Sage, London.

Norris, P. (2003). Preaching to the Converted? Pluralism, participation and party websites. *Party Politics*, 9(1):21–45.

Norris, P., Curtice, J., Sanders, D., Scammell, M., and Semetko, H. (1999). *On Message: Communicating the Campaign*. Sage, London.

Romm, N. (2000). *Accountability in Social Research - Issues & Debates*. Plenum Publishers, New York.

Shah, D. V., Kwak, N., and Holbert, R. L. (2001). "Connecting" and "Disconnecting" with Civic Life: Patterns of Internet Use and the Production of Social Capital. *Political Communication*, 18:141–162.

Shannon, C. (1948). A mathematical theory of communication. *Bell System Technical Journal*, 27:379–423 and 623–656.

Stefik, M. J. (1995). *Introduction to Knowledge Systems*. Morgan Kaufmann Publishers, San Francisco, California.

Stromer-Galley, J. (2004). Will Internet Voting Increase Turnout? An Analysis of Voter Preference. In Howard, P. and Jones, S., editors, *Society Online. The Internet in Context*, pages 87–101. Sage, Thousand Oaks.

Tkach-Kawasaki, L. (2003). Politics@japan. Party competition on the internet in Japan. *Party Politics*, 9(1):105–123.

Ward, S., Gibson, R., and Lusoli, W. (2003). Online Participation and Mobilisation in Britain. Hype, Hope and Reality. *Parliamentary Affairs*, 56:652–668.

West, D. (2004). E-Government and the Transformation of Service Delivery and Citizen Attitudes. *Public Administration Review*, 64(1):15–27.

Notes

[1]It should be noted that most of the names of the systems mentioned here are registered trademarks of their respective owners. For an overview, see `http://www.wijkiezenpartijvooru.nl`.

[2]The number reflects the number of individual party profiles. Some users, however, fill in the questionnaire a number of times, so the actual number of users is probably lower.

[3] "Wij kiezen partij voor u" translates into "We chose for you". The pun is also present in Dutch.

[4] "Stemwijzer" translates into "Voting guide" and "Vote smarter". `http://www.stemwijzer.nl`, `http://www.votematch.net`

[5] "Kieshulp" translates into "Choosing assistant" `http://www.kieshulp.net`

[6]`http://www.politarena.ch`

[7]`http://www.wahl-o-mat.de`

[8]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). 156.633 users of the profile website, therefore would imply something like 4 percent of the electorate.

[9] "Waar stem ik op?" translates into "What will I vote for?"

[10] "Doe de stemtest" translates into "Do the voting test" `http://www.doedestemtest.be`

[11]We comply with 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".

[12]In Germany, the non-profit Bundeszentrale für politische Bildung (2004) even offers various didactic tools for teachers, to support the class use of the Wahl-o-mat. Kennisnet offered similar support for the Kieshulp in the Netherlands.

[13]The PPWs include the possibility for users to give feedback to the designers. However, only 435 users in 2003 and only 166 users in 2004 have used this possibility. Hardly any of these remarks concerns the interpretation of the results.

[14]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, we can detect it is the same IP. However, from the hash value, we cannot infer the IP itself, so that the anonymity of the respondent is secured.

[15]At run time the IP address was looked up in a locally stored database that linked IP ranges to country codes. After looking up the country code, the IP address itself was not stored anymore.

[16]All page views a user makes without quitting the web browser have the same temporary cookie. This way, we can detect when users fill in the questionnaire more than once.

[17]Furthermore, even strong party supports have no interest at all in trying to boost the score of their party. Average scores were not communicated in the newspaper, this article being the first communication about average scores on "Wij kiezen partij voor u".

[18]These response rates are much higher than we had expected: apparently PPW users do not mind giving this kind of information. These high rates also demonstrate that our selection of users is indeed useful. If we take all profiles (including the additional profiles given out to the same computer), the response rates for this question are 54% in 2003 and 74% in 2004. Our selection of first time genuine users boosts the response rate to this rather sensitive question to 82 per cent in 2003 and 90 per cent in 2004.

[19]The 2000 elections were elections at the communal level, and at this level 295 different local political parties exist. These jointly make up the section "other" of the 2000 elections column. In 2003 there were elections for both the Chamber and the Senate. Shown here are the results for the Chamber. In 2004 there were elections for the Flemish parliament and the European parliament. Shown here are the results for the Flemish parliament.

[20]We should note that Figure 11 has not been corrected for changes in the background characteristics of the users during the course of the campaign.

[21]This is a measure in a unitless domain, and for technical reasons the domains have not been calibrated.