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Voter Autrement 2017 for the French Presidential Election

— The data of the *In Situ* Experiments

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Abstract

In April 2017, during the first round of the French presidential election, we performed a set of experiments on the use of voting rules. Participants to these experiments were asked to test several alternative voting methods, like approval voting, and other variants of evaluative voting. The experiments were both carried out *in situ* in polling stations during the first round of the presidential election (using paper ballots), and on line during the month preceding the first round, and until the second round of the election (using a web application). A total of 6358 participants took part to the *in situ* experiment and 37739 participants took part to the on line experiment. This paper describes the protocol of the *in situ* experiments and the format of the collected dataset.

Keywords: Voting Theory, Experiments, Elections, Online Voting

1. Introduction

In April 2017, several experiments about alternative voting methods at the French presidential election were carried out. During this operation,

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called “Voter Autrement”, voters from five French cities were asked, right after having voted in their polling stations for the first round of the official election, to test alternative voting methods for electing the French president. In total, 6358 voters participated in these *in situ* experiments.

In parallel, an electronic experiment was organized on the web. The online experiment also aimed at testing alternative voting methods for the presidential election, but using a web application. The online experiment is described in the companion paper Bouveret et al. (2018)[1].

After the end of the experiments, the data collected was gathered and processed to make it freely available to the community in the form of a dataset that can be downloaded on a public repository. The objective of this paper is to provide a description of the *in situ* experiments, including a description of the resulting dataset.

The paper is organized as follows. Section 2 provides some definitions about the voting methods tested in different voting stations. Then, in section 3 we present the voting papers used and some further details on the protocol. Finally, we present the data set in Section 4.

2. Voting Methods

In this section, we will describe the voting methods that were proposed to the participants. All are variants of “Evaluative voting” (also called in English Range Voting, Utilitarian Voting, or Score Voting).

Evaluative voting. Each voter grades each candidate on a predefined numerical scale. The candidate who gathers the largest point total is elected. We used several variants of evaluative voting:

- **AV** (approval voting) Each voter indicates for each candidate whether she approves or not the election of this candidate, the candidate who gathers the largest number of approbation is elected. Formally, the grade scale is the pair $(0,1)$.
- **EV[0,1,2]** The grade scale is $(0,1,2)$.
- **EV[-1,0,1]** The grade scale is $(-1,0,1)$.
- **EV[-.5,0,1]** The grade scale is $(-.5,0,1)$.
- **EV[-2,0,1]** The grade scale is $(-2,0,1)$.
- **EV[0,1,2,3]** The grade scale is $(0,1,2,3)$.

- **EV[-1,0,1,2]** The grade scale is $(-1,0,1,2)$.
- **EV[cont]** The grade scale is the continuum $[0,1]$, the voter makes a mark anywhere on the $[0,1]$ line;
- **AV2T** This is a runoff system where the two candidates with the largest approval scores are selected for the second round.

We also in one place asked the voters to “give their opinion” on the candidates (instead of “voting”) using the grade scale $(0,1,2,\dots,20)$. This is the standard scale used in class in France

For all these rules, abstention is allowed, in the sense that a voter is not required to grade all the candidates. We specifies in the instructions that if a voter does not evaluate a candidate c , then c receives the lowest score from this voter.

3. The Experimental Protocol

3.1. Basics

All the experiments follow the basic protocol described for instance in Baujard and Igersheim (2010)[2]. We refer the reader to in this chapter of the *Handbook on Approval Voting* [3] for the history of *in situ* experimentation and for further details. Here we simply recall the main points, and the points that distinguish the 2017 experiments from previous ones.

The basic ideas of the *in situ* protocol is to work inside the voting stations and to use the etiquette and decorum of the real election. This differentiates such experiments from usual exit pool surveys. In the week before the election, all the registered voters have received information about what is going to take place, the voting rules to be used and who are the people and organizations doing this research. Volunteers are hired for this information phase, and for handling the experimental urns which are placed just after the official ones.

3.2. Cities involved

In 2017 we asked participants how they would vote under two alternative rules, one of which was always Approval Voting. See below which rules were used where. Participants were also asked to fill a short questionnaire that also included some variations from one city to the other.

Hérouville Saint-Clair is a suburb of Caen (Normandy), Grenoble and Strasbourg are two important cities in Alsace and in the Alps, Crolles is a suburb of Grenoble and Allevard les Bains is a village not far from Grenoble. We worked in a total of 15 voting stations, as follows:

- Hérouville-Saint Clair, Ecole Quesnel, 2 stations. AV and (randomly) EV[0,1,2,3] or EV[0,1,2,3,4,5]. 711 participants.
- Crolles, 5 stations. Either AV and an opinion grading with scale (0,...,20), or AV2T with Borda4 to anticipate the second round. 2017 participants.
- Allevard-les-Bains, 3 stations. Either EV[-1,0,1] or EV[-2,0,1] or EV[-.5,0,1]. 836 participants.
- Grenoble, 3 stations. AV and EV[cont]. 1069 participants.
- Strasbourg, 2 stations. AV and (randomly) EV[-1,0,1] or EV[0,1,2] or EV[-1,0,1,2] or EV[0,1,2,3]. 1071 participants.

For more details, please refer to the description in Baujard et al. (2017) available at: https://www.gate.cnrs.fr/IMG/pdf/va2017_crglobal_v2.pdf. In particular this paper reports the (official) results for the first round in the five locations where the experiments have taken place.

3.3. Ballots

The ballots should not favour any candidate. In the official election, the order in which the candidates appear for any public communication is chosen at random and fixed once for all by the *Conseil Constitutionnel* at the beginning of the electoral period. This is the order we used.

Paper ballots provide the list of candidates in the appropriate format, as well as the questionnaire. Images of the proposed ballots are available at: <https://www.gate.cnrs.fr/spip.php?article580> and so are the information letters sent, before the election, to the registered voters. The ballots are also displayed in a companion paper called "Voter Autrement 2017 for French Presidential Election — The In Situ Experiments Voting Material", which is available on this website. All the voting rules to be used can be described in a couple of sentences. Please refer to the images of the ballots for the exact wording of the rules.

In the city of Crolles we tested two-round Approval Voting. This means that the first round is made with standard approval-type ballots and the two candidates who received the most approvals are selected to compete in a second round, that uses simple majority voting. In order to test this rule on a single day, we asked the participants to rank at least four candidates (hence the label "Borda4"), and we explained that this ranking is the one that would be used to simulate the second round.

In Alleverd-les-Bains we tested three variants of three-grade evaluative voting: $EV[-2,0,1]$, $EV[-1,0,1]$, and $EV[-.5,0,1]$, that were respectively labeled “Double-Dés&approbation”, “Dés&approbation” and “Semi-Dés&approbation.” The three grades were labelled “Pour”, “Neutre”, “Contre” (meaning “For”, “Neutral”, “Against”) and the instructions explained how many points each grade meant.

3.4. Questionnaires

The questionnaires proposed to the participants were slightly different from one place to the other. One commonality is that each of them ask: “For whom did you vote for the official vote?”.

Other questions concerns standard socio-demographic characteristics, opinions about the voting systems, and (in Stasbourg only) political affiliation, religious beliefs, reasons for voting participation, and sociability. Full description of the questionnaires can be found in the appendix below.

These self-selected sample are reasonably mixed in terms of gender and age, but they are biased in favor of highly educated people and against conservative voters.

4. The Dataset

In this section, we will describe the dataset that has been produced from the answers received from the 6358 participants. We specify where this data can be found, under which format it is provided and under which licence it can be used.

4.1. Licence and Repository

The data can be downloaded from the open science platform Zenodo. The repository of the project is available at the following url:

- Alleverd: <https://doi.org/10.5281/zenodo.3547606>
- Strasbourg: <https://doi.org/10.5281/zenodo.3547587>
- Crolles: <https://doi.org/10.5281/zenodo.3547604>
- Grenoble: <https://doi.org/10.5281/zenodo.3547598>
- HSC: <https://doi.org/10.5281/zenodo.3547592>

The voting material is available in an companion paper called "Voter Autrement 2017 for the French Presidential Election – The In Situ Experiments Voting Material" at the url <https://doi.org/10.5281/zenodo.3548303>.

The dataset Voter Autrement is made available under the Open Database License: <http://opendatacommons.org/licenses/odbl/1.0/>. Any rights in individual contents of the database are licensed under the Database Contents License: <http://opendatacommons.org/licenses/dbcl/1.0/>

Any written publication based on this dataset must explicitly cite the present article as a reference. The appropriate way to cite this article is the following:

Bouveret S., Blanch R., Baujard A., Durand F., Igersheim H., Lebon I., Laslier J-F, Lang J., Laruelle A., Merlin V. 2019. Voter Autrement 2017 for the French Presidential Election — Data Set of the *In Situ* Experiments. Available at <https://zenodo.org/>

The BibTeX format of this reference is the following:

```
@onlineVA2017dataset,  
author = Bouveret, S. and Blanch, R. and Baujard, A. and Durand, F. and  
Igersheim, H. and Lebon, I. and Laslier, J-F and Lang, J. and Laruelle, A.  
and Merlin, V.,  
title = Voter Autrement 2017 for French Presidential Election – Data Set of  
the In Situ Experiments,  
year = 2019,  
url = https://zenodo.org/,
```

4.2. Content Description

The dataset is made of 5 files in the Comma Separated Format with Headers. The first line corresponds to the header of the columns, presented and commented in the Appendix "Details content of the data set" in this file. The subsequent ones contain the data.

In each file, one row represents one participant, identified by a number. One number in one file corresponds to a unique participant, but notice a same number in different files corresponds to distinct participants. Each file corresponds to a different location, and displays, for each of them, the participants balloting information for the various voting rules which have been tested and their answers to the questionnaires.

Additionally, a file entitled `ANNEX-VotingMaterial.pdf` displays the different ballots papers used in the experiments in the various locations.

5. Conclusion

We have presented in this paper the experimental protocol we followed for the *in situ* part of the experiment Voter Autrement 2017. We have given some details on the data sets we have built from the answers of the participants. The details provided in this paper should give enough information to anyone willing to exploit the data collected during this experiment. For further information, consult the web site <https://www.gate.cnrs.fr/spip.php?article580> or contact one of the authors of this note.

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URL <https://doi.org/10.5281/zenodo.1199545>
- [2] A. Baujard, H. Igersheim, Framed-field experiments on approval voting. Lessons from the 2002 and 2007 french presidential elections, in: J.-F. Laslier, R. Sanver (Eds.), *Approval Voting*, Springer, Heidelberg, 2010, Ch. 15, pp. 357–395. doi:10.1007/978-3-642-02839-7_15.
- [3] J.-F. Laslier, R. Sanver, *Handbook on Approval Voting*, Springer-Verlag, Heidelberg, 2010.

Appendix A. Detailed content of the dataset

Appendix A.1. Hérouville-Saint-Clair data

As part of the experimentation organized the first round day of the Presidential Election (April 23, 2017) in the voting stations of "Ecole Quesnel" of Hérouville-Saint-Clair (Normandy), two alternative voting systems were

proposed to voters: Approval voting $\{0, 1\}$ and randomly one of the following two modes of range voting: $\{0, 1, 2, 3\}$ (ballots from 1 to 374) or $\{0, 1, 2, 3, 4, 5\}$ (ballots from 375 to 711). In case of no response, the 0 grade is assigned by default. After these two voting methods, voters could answer a questionnaire. Some voters had the opportunity to choose between paper ballot and a digital tablet vote. Tablet votes are for numbers from 293 to 374 and from 644 to 711. Voters who used digital tablets did not face the questions in columns 41 and 42.

Column 1 Vote Number

Column 2 Approval voting, grade of Nicolas Dupont-Aignan

Column 3 Approval voting, grade of Marine Le Pen

Column 4 Approval voting, grade of Emmanuel Macron

Column 5 Approval voting, grade of Benoît Hamon

Column 6 Approval voting, grade of Nathalie Arthaud

Column 7 Approval voting, grade of Philippe Poutou

Column 8 Approval voting, grade of Jacques Cheminade

Column 9 Approval voting, grade of Jean Lasalle

Column 10 Approval voting, grade of Jean-Luc Mélenchon

Column 11 Approval voting, grade of François Asselineau

Column 12 Approval voting, grade of François Fillon

Column 13 Approval voting, blank ballot

Column 14 Approval voting, spoiled ballot

Column 15 $\{0, 1, 2, 3\}$ Range voting, grade of Nicolas Dupont-Aignan

Column 16 $\{0, 1, 2, 3\}$ Range voting, grade of Marine Le Pen

Column 17 $\{0, 1, 2, 3\}$ Range voting, grade of Emmanuel Macron

Column 18 $\{0, 1, 2, 3\}$ Range voting, grade of Benoît Hamon

Column 19 $\{0, 1, 2, 3\}$ Range voting, grade of Nathalie Arthaud

- Column 20** {0, 1, 2, 3} Range voting, grade of Philippe Poutou
- Column 21** {0, 1, 2, 3} Range voting, grade of Jacques Cheminade
- Column 22** {0, 1, 2, 3} Range voting, grade of Jean Lasalle
- Column 23** {0, 1, 2, 3} Range voting, grade of Jean-Luc Mélenchon
- Column 24** {0, 1, 2, 3} Range voting, grade of François Asselineau
- Column 25** {0, 1, 2, 3} Range voting, grade of François Fillon
- Column 26** {0, 1, 2, 3} Range voting, blank ballot
- Column 27** {0, 1, 2, 3} Range voting, spoiled ballot
- Column 28** {0, 1, 2, 3, 4, 5} Range voting, grade of Nicolas Dupont-Aignan
- Column 29** {0, 1, 2, 3, 4, 5} Range voting, grade of Marine Le Pen
- Column 30** {0, 1, 2, 3, 4, 5} Range voting, grade of Emmanuel Macron
- Column 31** {0, 1, 2, 3, 4, 5} Range voting, grade of Benoît Hamon
- Column 32** {0, 1, 2, 3, 4, 5} Range voting, grade of Nathalie Arthaud
- Column 33** {0, 1, 2, 3, 4, 5} Range voting, grade of Philippe Poutou
- Column 34** {0, 1, 2, 3, 4, 5} Range voting, grade of Jacques Cheminade
- Column 35** {0, 1, 2, 3, 4, 5} Range voting, grade of Jean Lasalle
- Column 36** {0, 1, 2, 3, 4, 5} Range voting, grade of Jean-Luc Mélenchon
- Column 37** {0, 1, 2, 3, 4, 5} Range voting, grade of François Asselineau
- Column 38** {0, 1, 2, 3, 4, 5} Range voting, grade of François Fillon
- Column 39** {0, 1, 2, 3, 4, 5} Range voting, blank ballot
- Column 40** {0, 1, 2, 3, 4, 5} Range voting, spoiled ballot
- Column 41** Does it seem possible to you to adopt approval voting in the Presidential election? (1=yes, 0=no)
- Column 42** Does it seem possible to you to adopt range voting in the Presidential election? (1=yes, 0=no)

Column 43 Gender (0=field empty / 1=male / 2=female)

Column 44 Are you between 18 and 29 years old? (1=yes, 0=no)

Column 45 Are you between 30 and 39 years old? (1=yes, 0=no)

Column 46 Are you between 40 and 49 years old? (1=yes, 0=no)

Column 47 Are you between 50 and 59 years old? (1=yes, 0=no)

Column 48 Are you between 60 and 69 years old? (1=yes, 0=no)

Column 49 Are you 70 years old or older? (1=yes, 0=no)

Column 50 Vote at the official election (1=Dupont-Aignan / 2=Marine Le Pen / 3=Emmanuel Macron / 4=Hamon / 5=Arthaud / 6=Poutou / 7=Cheminade / 8=Lassalle / 9= Mélenchon / 10 = Asselineau / 11 = Fillon / 12 = Blank ballot)

Appendix A.2. Strasbourg data

Voters from the two polling stations in Strasbourg’s ”Salle de la Bourse” had the opportunity to test two alternative voting systems: Approval voting $\{0, 1\}$ and randomly one of the following four modes of range voting: $\{0, 1, 2\}$ (ballots from 1 to 263), $\{-1, 0, 1\}$ (ballots from 264 to 526), $\{0, 1, 2, 3\}$ (ballots 527 to 823) or $\{-1, 0, 1, 2\}$ (ballots from 824 to 1071). Regarding range voting methods, empty boxes correspond to the situations in which the voter did not give the candidate a grade. In case of no response, the lowest grade (-1 or 0 as appropriate) is assigned by default. After these two voting methods, voters could answer a questionnaire.

Column 1 Vote Number

Column 2 Approval voting, grade of Nicolas Dupont-Aignan

Column 3 Approval voting, grade of Marine Le Pen

Column 4 Approval voting, grade of Emmanuel Macron

Column 5 Approval voting, grade of Benoît Hamon

Column 6 Approval voting, grade of Nathalie Arthaud

Column 7 Approval voting, grade of Philippe Poutou

Column 8 Approval voting, grade of Jacques Cheminade

Column 9 Approval voting, grade of Jean Lasalle

Column 10 Approval voting, grade of Jean-Luc Mélenchon

Column 11 Approval voting, grade of François Asselineau

Column 12 Approval voting, grade of François Fillon

Column 13 Approval voting, spoiled ballot

Column 14 Approval voting, blank ballot

Column 15 $\{0, 1, 2\}$ Range voting, grade of Nicolas Dupont-Aignan

Column 16 $\{0, 1, 2\}$ Range voting, grade of Marine Le Pen

Column 17 $\{0, 1, 2\}$ Range voting, grade of Emmanuel Macron

Column 18 $\{0, 1, 2\}$ Range voting, grade of Benoît Hamon

Column 19 $\{0, 1, 2\}$ Range voting, grade of Nathalie Arthaud

Column 20 $\{0, 1, 2\}$ Range voting, grade of Philippe Poutou

Column 21 $\{0, 1, 2\}$ Range voting, grade of Jacques Cheminade

Column 22 $\{0, 1, 2\}$ Range voting, grade of Jean Lasalle

Column 23 $\{0, 1, 2\}$ Range voting, grade of Jean-Luc Mélenchon

Column 24 $\{0, 1, 2\}$ Range voting, grade of François Asselineau

Column 25 $\{0, 1, 2\}$ Range voting, grade of François Fillon

Column 26 $\{0, 1, 2\}$ Range voting, spoiled ballot

Column 27 $\{0, 1, 2\}$ Range voting, blank ballot

Column 28 $\{-1, 0, 1\}$ Range voting, grade of Nicolas Dupont-Aignan

Column 29 $\{-1, 0, 1\}$ Range voting, grade of Marine Le Pen

Column 30 $\{-1, 0, 1\}$ Range voting, grade of Emmanuel Macron

Column 31 $\{-1, 0, 1\}$ Range voting, grade of Benoît Hamon

Column 32 $\{-1, 0, 1\}$ Range voting, grade of Nathalie Arthaud

Column 33 $\{-1, 0, 1\}$ Range voting, grade of Philippe Poutou

Column 34 $\{-1, 0, 1\}$ Range voting, grade of Jacques Cheminade

Column 35 $\{-1, 0, 1\}$ Range voting, grade of Jean Lasalle

Column 36 $\{-1, 0, 1\}$ Range voting, grade of Jean-Luc Mélenchon

Column 37 $\{-1, 0, 1\}$ Range voting, grade of François Asselineau

Column 38 $\{-1, 0, 1\}$ Range voting, grade of François Fillon

Column 39 $\{-1, 0, 1\}$ Range voting, spoiled ballot

Column 40 $\{-1, 0, 1\}$ Range voting, blank ballot

Column 41 $\{0, 1, 2, 3\}$ Range voting, grade of Nicolas Dupont-Aignan

Column 42 $\{0, 1, 2, 3\}$ Range voting, grade of Marine Le Pen

Column 43 $\{0, 1, 2, 3\}$ Range voting, grade of Emmanuel Macron

Column 44 $\{0, 1, 2, 3\}$ Range voting, grade of Benoît Hamon

Column 45 $\{0, 1, 2, 3\}$ Range voting, grade of Nathalie Arthaud

Column 46 $\{0, 1, 2, 3\}$ Range voting, grade of Philippe Poutou

Column 47 $\{0, 1, 2, 3\}$ Range voting, grade of Jacques Cheminade

Column 48 $\{0, 1, 2, 3\}$ Range voting, grade of Jean Lasalle

Column 49 $\{0, 1, 2, 3\}$ Range voting, grade of Jean-Luc Mélenchon

Column 50 $\{0, 1, 2, 3\}$ Range voting, grade of François Asselineau

Column 51 $\{0, 1, 2, 3\}$ Range voting, grade of François Fillon

Column 52 $\{0, 1, 2, 3\}$ Range voting, spoiled ballot

Column 53 $\{0, 1, 2, 3\}$ Range voting, blank ballot

Column 54 $\{-1, 0, 1, 2\}$ Range voting, grade of Nicolas Dupont-Aignan

Column 55 $\{-1, 0, 1, 2\}$ Range voting, grade of Marine Le Pen

Column 56 $\{-1, 0, 1, 2\}$ Range voting, grade of Emmanuel Macron

- Column 57** $\{-1, 0, 1, 2\}$ Range voting, grade of Benoît Hamon
- Column 58** $\{-1, 0, 1, 2\}$ Range voting, grade of Nathalie Arthaud
- Column 59** $\{-1, 0, 1, 2\}$ Range voting, grade of Philippe Poutou
- Column 60** $\{-1, 0, 1, 2\}$ Range voting, grade of Jacques Cheminade
- Column 61** $\{-1, 0, 1, 2\}$ Range voting, grade of Jean Lasalle
- Column 62** $\{-1, 0, 1, 2\}$ Range voting, grade of Jean-Luc Mélenchon
- Column 63** $\{-1, 0, 1, 2\}$ Range voting, grade of François Asselineau
- Column 64** $\{-1, 0, 1, 2\}$ Range voting, grade of François Fillon
- Column 65** $\{-1, 0, 1, 2\}$ Range voting, spoiled ballot
- Column 66** $\{-1, 0, 1, 2\}$ Range voting, blank ballot
- Column 67** Opinion about experienced methods (1 = "I liked Approval voting" / 2 = "I liked Range voting" / 3="I liked both" / 4 = "I did not like one or the other")
- Column 68** Vote at the official election (1=Dupont-Aignan / 2=Marine Le Pen/ 3=Emmanuel Macron / 4=Hamon / 5=Arthaud / 6=Poutou / 7=Cheminade / 8=Lassalle / 9= Mélenchon / 10 = Asselineau / 11 = Fillon / 12 = Blank ballot)
- Column 69** To vote is (multiple choices) : 1 = a right, 2 = a duty, 3 = a chance, 4 = useful, 5 = useless
- Column 70** Political position on a 10-step scale: from 1 = extreme left to 10= extreme right
- Column 71** Age group (1=18-29 / 2=30-39 / 3 = 40-49 / 4=50-59 / 5=60-69 / 6 = more than 70 / no answer = field empty)
- Column 72** Gender (1=Male / 2=Female/ no answer =field empty)
- Column 73** Education level (1 = Primary / 2 = Secondary / 3 = Higher)
- Column 74** Socio-professional category (1 = Artisan / 2 = Private sector employee / 3 = Public sector employee / 4 = Unemployed / 5 = Retired / 6 = Student / 7 = Other)

Column 75 Practice of religious worship (1 = Regularly / 2 = Sometimes / 3 = Never)

Column 76 Sociability (1 = "I go out a lot" / 2 = "I go out a little" / 3 = "I am rather lonely")

Appendix A.3. Grenoble data

Voters from the two polling stations in Grenoble "Vieux Temple" had the opportunity to test two alternative voting systems: Approval voting $\{0, 1\}$, and voting on a continuous qualitative scale. Concretely, voters were proposed to vote by evaluating each candidate along a continuous line ranging from an extreme negative evaluation (labelled "*contre*" (against)) and an extreme positive one (labelled "*pour*" (in favor)), with the mid-point of the line being also labelled ("Indifférent"). the voter would draw a mark with a pencil freely on the line. The choice of each voter results in a value that is coded in the interval $[0, 1]$ in the files. After these two voting methods, voters could answer a questionnaire.

Column 1 Voter number

Column 2 Approval voting, grade of Nicolas Dupont-Aignan

Column 3 Approval voting, grade of Marine Le Pen

Column 4 Approval voting, grade of Emmanuel Macron

Column 5 Approval voting, grade of Benoît Hamon

Column 6 Approval voting, grade of Nathalie Arthaud

Column 7 Approval voting, grade of Philippe Poutou

Column 8 Approval voting, grade of Jacques Cheminade

Column 9 Approval voting, grade of Jean Lasalle

Column 10 Approval voting, grade of Jean-Luc Mélenchon

Column 11 Approval voting, grade of François Asselineau

Column 12 Approval voting, grade of François Fillon

Column 13 Continuous scale $[0, 1]$, grade of Nicolas Dupont-Aignan

Column 14 Continuous scale $[0, 1]$, grade of Marine Le Pen

- Column 15** Continuous scale [0, 1], grade of Emmanuel Macron
- Column 16** Continuous scale [0, 1], grade of Benoît Hamon
- Column 17** Continuous scale [0, 1], grade of Nathalie Arthaud
- Column 18** Continuous scale [0, 1], grade of Philippe Poutou
- Column 19** Continuous scale [0, 1], grade of Jacques Cheminade
- Column 20** Continuous scale [0, 1], grade of Jean Lasalle
- Column 21** Continuous scale [0, 1], grade of Jean-Luc Mélenchon
- Column 22** Continuous scale [0, 1], grade of François Asselineau
- Column 23** Continuous scale [0, 1], grade of François Fillon
- Column 24** Vote at the official election (NDA=Dupont-Aignan / MLP=Marine Le Pen / EM=Emmanuel Macron / BH=Hamon / NA=Arthaud / PP=Poutou / JC=Cheminade / JL=Lassalle / JLM= Mélenchon / FA = Asselineau / FF = Fillon / B = Blank ballot / NSPP = no answer)
- Column 25** Age group (18=18-29 / 30=30-39 / 40 = 40-49 / 50=50-59 / 60=60-69 / 70 = more than 70 / NSPP = no answer)
- Column 26** Gender (M=Male / F=Female / NSPP = no answer)
- Column 27** Education (1 = Primary / 2 = Secondary / S = Tertiary / NSPP= no answer)
- Column 28** Socio-professional category (ART = Artisan / PRI = Private sector employee / PUB = Public sector employee / CHO = unemployed / RET = retired / ETU = Student / AUT = other / NSPP = no answer)
- Column 29** Opinion about approval voting (0: Very bad / 1: Bad / 2: Average / 3: Good / 4: Very good / NSPP = no answer)
- Column 30** Evaluation about evaluative voting in continuous scale (0: Very bad / 1: Bad / 2: Average / 3: Good / 4: Very good / NSPP = no answer)
- Column 31** Evaluation about the official voting system (0: Very bad / 1: Bad / 2: Average / 3: Good / 4: Very good / NSPP = no answer)

Appendix A.4. Crolles data

Voters from the polling stations of Crolles had (randomly) the opportunity to test two alternative voting systems: the standard one-round approval voting rule (ballots from 1 to 1321) and the two rounds approval voting rule (ballots from 1322 to 2617). The voters who tested the one-round approval rule were then asked to express their opinion on each candidate by giving them a score between 0 (worst opinion) and 20 (best opinion). The "no opinion" option was possible. The voters who tested the two rounds approval rule were then invited to rank as many candidates as possible, in order to later simulate the result of the second round. On the day of the experimentation the duel that would result from the approval voting considered as a first round, was obviously unknown. Thanks to these rankings the second round duel could be simulated later. A questionnaire followed these methods of voting and / or evaluation.

Column 1 Voter number

Column 2 One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Nicolas Dupont-Aignan

Column 3 One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Marine Le Pen

Column 4 One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Emmanuel Macron

Column 5 One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Benoît Hamon

Column 6 One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Nathalie Arthaud

Column 7 One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Philippe Poutou

- Column 8** One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Jacques Cheminade
- Column 9** One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Jean Lasalle
- Column 10** One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of Jean-Luc Mélenchon
- Column 11** One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of François Asselineau
- Column 12** One round Approval voting for ballots from 1 to 1321 or first of the two round Approval voting for ballots from 1322 to 2617, grade of François Fillon
- Column 13** Opinion note (between 0 and 20; 21 for "without opinion") about Nicolas Dupont-Aignan
- Column 14** Opinion note (between 0 and 20; 21 for "without opinion") about Marine Le Pen
- Column 15** Opinion note (between 0 and 20; 21 for "without opinion") about Emmanuel Macron
- Column 16** Opinion note (between 0 and 20; 21 for "without opinion") about Benoît Hamon
- Column 17** Opinion note (between 0 and 20; 21 for "without opinion") about Nathalie Arthaud
- Column 18** Opinion note (between 0 and 20; 21 for "without opinion") about Philippe Poutou
- Column 19** Opinion note (between 0 and 20; 21 for "without opinion") about Jacques Cheminade
- Column 20** Opinion note (between 0 and 20; 21 for "without opinion") about Jean Lasalle

- Column 21** Opinion note (between 0 and 20; 21 for "without opinion")
about Jean-Luc Mélenchon
- Column 22** Opinion note (between 0 and 20; 21 for "without opinion")
about François Asselineau
- Column 23** Opinion note (between 0 and 20; 21 for "without opinion")
about François Fillon
- Column 24** Possible ranking of Nicolas Dupont-Aignan for the second round
simulation
- Column 25** Possible ranking of Marine Le Pen for the second round sim-
ulation
- Column 26** Possible ranking of Emmanuel Macron for the second round
simulation
- Column 27** Possible ranking of Benoît Hamon for the second round simu-
lation
- Column 28** Possible ranking of Nathalie Arthaud for the second round
simulation
- Column 29** Possible ranking of Philippe Poutou for the second round sim-
ulation
- Column 30** Possible ranking of Jacques Cheminade for the second round
simulation
- Column 31** Possible ranking of Jean Lasalle for the second round simula-
tion
- Column 32** Possible ranking of Jean-Luc Mélenchon for the second round
simulation
- Column 33** Possible ranking of François Asselineau for the second round
simulation
- Column 34** Possible ranking of François Fillon for the second round sim-
ulation
- Column 35** Are you between 18 and 29 years old? (1 = yes / 0 = no)
- Column 36** Are you between 30 and 39 years old? (1=yes, 0=no)

- Column 37** Are you between 40 and 49 years old? (1=yes, 0=no)
- Column 38** Are you between 50 and 59 years old? (1=yes, 0=no)
- Column 39** Are you between 60 and 69 years old? (1=yes, 0=no)
- Column 40** Are you 70 years old or older? (1=yes, 0=no)
- Column 41** Are you a woman? (1 = yes / 0 = no)
- Column 42** Are you a man? (1 = yes / 0 = no)
- Column 43** Does your level of education correspond to the primary level?
(1 = yes / 0 = no)
- Column 44** Does your level of education correspond to the secondary level?
(1 = yes / 0 = no)
- Column 45** Does your level of education correspond to the higher education level? (1 = yes / 0 = no)
- Column 46** Do you prefer to not indicate your highest level of education?
(1 = yes / 0 = no)
- Column 47** Are you an artisan, an entrepreneur or do you practice another liberal profession? (1 = yes / 0 = no)
- Column 48** Do you work in private sector? (1 = yes / 0 = no)
- Column 49** Do you work in public sector? (1 = yes / 0 = no)
- Column 50** Are you unemployed? (1 = yes / 0 = no)
- Column 51** Are you retired? (1 = yes / 0 = no)
- Column 52** Are you a student? (1 = yes / 0 = no)
- Column 53** Are you in another situation? (1 = yes / 0 = no)
- Column 54** Specify this situation
- Column 55** Did you vote for Nicolas Dupont-Aignan in the official vote?
(1 = yes / 0 = no)
- Column 56** Did you vote for Marine Le Pen in the official vote? (1 = yes / 0 = no)

Column 57 Did you vote for Emmanuel Macron in the official vote? (1 = yes / 0 = no)

Column 58 Did you vote for Benoît Hamon in the official vote? (1 = yes / 0 = no)

Column 59 Did you vote for Nathalie Arthaud in the official vote? (1 = yes / 0 = no)

Column 60 Did you vote for Philippe Poutou in the official vote? (1 = yes / 0 = no)

Column 61 Did you vote for Jacques Cheminade in the official vote? (1 = yes / 0 = no)

Column 62 Did you vote for Jean Lasalle in the official vote? (1 = yes / 0 = no)

Column 63 Did you vote for Jean-Luc Mélenchon in the official vote? (1 = yes / 0 = no)

Column 64 Did you vote for François Asselineau in the official vote? (1 = yes / 0 = no)

Column 65 Did you vote for François Fillon in the official vote? (1 = yes / 0 = no)

Column 66 Did you choose a blank vote for the official vote? (1 = yes / 0 = no)

Alleward data

Voters from the polling stations of Crolles had the opportunity to test the Dis&approval voting system. The participants might express their opinion: "for", "neutral" or "against" each of the candidates. These three opinions are randomly associated with the three following grade structures: $\{-0.5, 0, 1\}$, $\{-1, 0, 1\}$ and $\{-2, 0, 1\}$. Only one grade structure is offered to each participant. After this voting method, voters could answer a questionnaire.

Column 1 Voter number

Column 2 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Nicolas Dupont-Aignan

Column 3 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Marine Le Pen

Column 4 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Emmanuel Macron

Column 5 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Benoît Hamon

Column 6 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Nathalie Arthaud

Column 7 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Philippe Poutou

Column 8 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Jacques Cheminade

Column 9 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Jean Lasalle

Column 10 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of Jean-Luc Mélenchon

Column 11 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of François Asselineau

Column 12 $\{-0.5, 0, 1\}$ Dis&approval voting, grade of François Fillon

Column 13 $\{-1, 0, 1\}$ Dis&approval voting, grade of Nicolas Dupont-Aignan

Column 14 $\{-1, 0, 1\}$ Dis&approval voting, grade of Marine Le Pen

Column 15 $\{-1, 0, 1\}$ Dis&approval voting, grade of Emmanuel Macron

Column 16 $\{-1, 0, 1\}$ Dis&approval voting, grade of Benoît Hamon

Column 17 $\{-1, 0, 1\}$ Dis&approval voting, grade of Nathalie Arthaud

Column 18 $\{-1, 0, 1\}$ Dis&approval voting, grade of Philippe Poutou

Column 19 $\{-1, 0, 1\}$ Dis&approval voting, grade of Jacques Cheminade

Column 20 $\{-1, 0, 1\}$ Dis&approval voting, grade of Jean Lasalle

Column 21 $\{-1, 0, 1\}$ Dis&approval voting, grade of Jean-Luc Mélenchon

Column 22 $\{-1, 0, 1\}$ Dis&approval voting, grade of François Asselineau

Column 23 $\{-1, 0, 1\}$ Dis&approval voting, grade of François Fillon

Column 24 $\{-2, 0, 1\}$ Dis&approval voting, grade of Nicolas Dupont-Aignan

Column 25 $\{-2, 0, 1\}$ Dis&approval voting, grade of Marine Le Pen

Column 26 $\{-2, 0, 1\}$ Dis&approval voting, grade of Emmanuel Macron

Column 27 $\{-2, 0, 1\}$ Dis&approval voting, grade of Benoît Hamon

- Column 28** $\{-2, 0, 1\}$ Dis&approval voting, grade of Nathalie Arthaud
- Column 29** $\{-2, 0, 1\}$ Dis&approval voting, grade of Philippe Poutou
- Column 30** $\{-2, 0, 1\}$ Dis&approval voting, grade of Jacques Cheminade
- Column 31** $\{-2, 0, 1\}$ Dis&approval voting, grade of Jean Lasalle
- Column 32** $\{-2, 0, 1\}$ Dis&approval voting, grade of Jean-Luc Mélenchon
- Column 33** $\{-2, 0, 1\}$ Dis&approval voting, grade of François Asselineau
- Column 34** $\{-2, 0, 1\}$ Dis&approval voting, grade of François Fillon
- Column 35** Vote at the official election (0=No response / 1=Dupont-Aignan / 2=Marine Le Pen / 3=Emmanuel Macron / 4=Hamon / 5=Arthaud / 6=Poutou / 7=Cheminade / 8=Lassalle / 9= Mélenchon / 10 = Asselineau / 11 = Fillon / 12 = Blank ballot)
- Column 36** Gender (1=Male / 2=Female / 0=No response)
- Column 37** Age (1=18-30 / 2=31-40 / 3 = 41-50 / 4=51-60 / 5=61-70 / 6 = more than 71 / 0=No response)
- Column 38** Socio-professional category (1 = Artisan / 2 = Private sector employee / 3 = Public sector employee / 4 = Unemployed / 5 = Retired / 6 = Student / 7 = other / 0=No response)
- Column 39** Education (1 = Primary / 2 = Secondary / 3 = Tertiary / 0=No response)