Who's favored by evaluative voting? An experiment conducted during the 2012 French presidential election

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ABSTRACT

Under evaluative voting, the voter freely grades each candidate on a numerical scale, with the winning candidate being determined by the sum of the grades they receive. This paper compares evaluative voting with the two-round system, reporting on an experiment, conducted during the 2012 French presidential election, which attracted 2340 participants. Here we show that the two-round system favors "exclusive" candidates, that is candidates who elicit strong feelings, while evaluative rules favor "inclusive" candidates, that is candidates who attract the support of a large span of the electorate. These differences are explained by two complementary reasons: the opportunity for the voter to support several candidates under evaluative voting rules, and the specific pattern of strategic voting under the two-round voting rule.

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A voting rule is supposed to be able to determine the candidate most favored by a community of voters. However, it is a well-established conclusion of social choice theory that voting by itself is mathematically incapable of picking the single and uncontroversial winner of an election (Arrow, 1951). For a given set of electoral preferences, different voting rules may elect or favor distinct candidates (Forstythe et al., 1996; Van der Straeten et al., 2010; Baujard and Igersheim, 2011a,b). However, little research has thus far been conducted on the kinds of winners, or the different types of rankings, which are induced by different voting rules. This article contributes to filling this gap in the literature by providing a comparative study of which candidates are favored by different modalities of evaluative voting rules as compared to those favored by the first-round of the two-round system.

By "evaluative voting," we refer to voting rules in which the voter freely grades each candidate on a pre-defined numerical scale. The same grade may be given to several candidates. The sum of the grades a candidate receives is her score, and the candidate who gets the highest score is elected. Evaluative voting, also called utilitarian voting, or range voting, is historically and conceptually linked to the utilitarian paradigm (Bentham, 1822; Dhillon and Mertens, 1999; Hillinger, 2005). While the principle of additive evaluation is widely used in practice (schools, sports, market research, feeling thermometers, etc.), the idea seems to be absent from the political science literature, and

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social choice theory has, until recently, paid only limited attention to it as a voting mechanism (see, however, Hillinger, 2004a,b; Smaoui, 2007; Gaertner and Xu, 2012; Núñez and Laslier, 2013).

Approval Voting is a particular case of evaluative voting which employs the minimal scale {0,1}; thus, under this rule the voter may simply approve or disapprove each candidate. The score of each candidate is the number of approvals she receives, and the candidate with the largest score is elected. Brams and Fishburn introduced this rule to the academic literature in the late seventies (Brams and Fishburn, 1978), and by now it has become a standard voting rule, widely studied by theorists (see notably Brams and Fishburn, 2005; Laslier and Sanver, 2010).

Evaluation voting is rare in politics, although countries like Latvia, Luxemburg or Germany do sometimes allow vote cumulation or negative voting. Run-off systems are the most common rules used for direct presidential elections (Blais et al., 1997). In France, since 1962, the presidential elections are direct and the voting rule is the following two-round system: if no candidate receives a majority of votes in the first round of voting, the two highest-scoring candidates proceed to a run-off round. A question thus naturally arises: What would happen if presidential voting was conducted according to an evaluative rule? In this paper, we aim to shed light on the properties of evaluative voting. In particular, we offer new insights in answer to the following questions: Could evaluative voting rules be used for official elections? and, Would different results then be obtained?

Our investigation is based on experimental data collected in April 2012 during the first round of the French presidential elections. Experiments on voting rules during actual political elections have been taking place in various localities since 2002.[1] Grofman proposed the term *In Situ* experiments to describe this method, according to which voters are offered an opportunity, at the time and place of a real election, to express how they would have voted under alternative voting rules (Grofman et al., 2011 [2]). On April 22nd, 2012, during the first round of the 2012 presidential elections in France, we tested alternative rules in five voting stations. Invitations to participate were extended to more than 5000 voters, with 2340 people eventually taking part. The rules under test were approval voting (henceforth AV), and other variants of evaluative voting (henceforth EV),

using the scales {0,1,2}, {−1,0,+1}, and {0, 1, …, 20}. Henceforth we refer to these voting rules respectively as EV(0,1,2), EV(−1,0,1), and EV(0,…,20).

The state of the art with respect to previous experiments on AV can be summarized as follows (see Baujard and Igersheim, 2010 for more details). (i) Such experiments are feasible, and most voters welcome the idea of experimenting with voting rules. (ii) The principles of AV or EV are easily understood; voters are particularly favorable to EV. (iii) Within the observed political context, AV and EV modify the overall ranking of candidates compared to the official first round voting rule, and might indeed yield different outcomes.

The 2012 experiment confirms these results and allows us to go further in the comparison of the properties of the variants of evaluative voting and the first-round of the two-round system. In this paper, we focus in particular on the analysis of their influence with respect to the fate of the candidates: who wins, who loses, and why?

To do so, we here develop two symmetric notions based on the kind of relationship the candidates have with the voters. Candidates who arouse strong feelings, whether positive or negative, among voters, are called "exclusive" candidates; while candidates who are liked by a large number of voters, but not necessarily strongly liked, nor in a way that excludes support for others, are called "inclusive" candidates.

After a quick presentation of the experimental protocol, we first show that these alternative rules favor "inclusive" candidates, while the official French system, *i.e.*, the two-round system, favors "exclusive" candidates in the first round. Next, we argue that this property is caused by two factors: a mechanical factor which concerns the greater potential for expression offered by evaluative voting rules; and a behavioral factor which concerns the specific patterns of strategic voting which voters adopt under the two-round system. While the mechanical factor favors inclusive candidates under evaluative voting, the behavioral factor advantages exclusive candidates under the two-round system.

1. Experimental design and adjusted data

Before setting out our analysis it is first necessary to explain the experimental design and the principles upon which the subsequent adjustment of the data was based.[3]

During the first round of the 2012 French presidential elections, certain voters were invited to take part in our experiment and test two other voting rules, once they had voted in the official ballot. Five voting stations, located in three different cities, were selected to host the experiment: the two voting stations of the village of Louvigny, Normandy; one voting station in the city of Saint-Etienne, Rhône-Alpes; and two voting stations in the city of Strasbourg, Alsace. Among the 5371 voters registered for these five voting stations,[4] all 4319 voters who actually showed

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[1] Approval Voting was tested in France in 2002 (Balinski et al., 2002, 2003; Laslier and van der Straeten, 2004, 2008). In 2007, other rules were also tested: EV with grades {0,1,2} (Baujard and Igersheim, 2007, 2010; Baujard et al., 2011), majority judgment (Balinski and Laraki, 2011), and single transferable vote (Farvaque et al., 2011). Similar experiments on AV have taken place in Germany (Alós-Ferrer and Granic, 2010) and in Benin (Kabre et al., 2012).

[2] As well as these, two voting experiments were conducted via the Internet during the 2012 French presidential elections. The site Voteaupluriel.org was set up under the supervision of Blais, Laslier, and Van der Straeten, following a similar experiment conducted alongside the Canadian elections in 2011 (threeontariovotes.org). The site Votedevaleur.org was managed by a French association for the promotion of evaluative voting. These Internet events were independent, but partly coordinated with the experiments on which we report in the present paper. Their results are complementary (see Van der Straeten et al., 2013 and http://doc.votedevaleur.org/exp2012/compteRenduPreliminaire/web/co/synthese.html) and we shall occasionally refer to them in this paper.

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[3] For further details regarding the experimental protocol (information on voters, progress, and experimental ballots) and the results (participation and expression rates, raw results, data adjustment techniques), see Baujard et al., 2013a,b.

[4] About 85% of the French population over 18 is registered (Rieg, 2011).