**Details Matter. Secluded Areas and Voting Secrecy with French Ballots**

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**ABSTRACT**

To explore the psychology of voting secrecy, we conducted a field experiment to examine voter sensitivity to arrangements for ballot paper selection under the French ballot system (i.e., multiple ballot papers). Working closely with Swedish election authorities, we randomly assigned participants to vote in a fictional election under low, medium-high and high privacy conditions with a follow up paper-and-pen survey to record perceived voting secrecy. Results show that participants perceived an arrangement for selecting ballot papers behind a closed screen as clearly more secret than one where selection was public, and that a third and even more private arrangement, where voters did not have to walk a few meters with ballot papers in hand, potentially visible to onlookers, provided even higher levels of perceived secrecy. The study demonstrates that voters are sensitive even to small changes in the voting environment. Accordingly, election administrators should be aware that details matter for the experience of voting secretly.

**Keywords:** ballot paper, voting secrecy, proportional representation, field experiment, voter psychology

**Introduction**

A fundamental problem facing democratic electoral systems is how to guarantee voting secrecy. Lack of voting secrecy can instigate distrust in the electoral system and undermine motivation to turn out (Gerber et al. 2013a; Peeples 2020). Moreover, voting secrecy is important because voters may be induced or coerced to vote for certain parties if they believe that others will observe their choice at the voting booth (e.g., Birch 2011). For example, union members in the US have been shown to be less inclined to vote for Republicans if they perceive their vote is not secret (Gerber et al. 2013b), and polling stations designed with extra privacy measures have been shown to alleviate concerns of voting secrecy among voters inclined to vote against the local majority in a presidential primary race in Utah (Karpowitz et al. 2011).

In established democracies with credible electoral system, voting secrecy is primarily a matter of perception. As noted by Gerber and colleagues (2013a, p. 78), “Whatever the truth is regarding actual ballot secrecy, what is crucial for understanding political behavior is whether people *think* that voting decisions are secret.” The theoretical implication of this concerns voter sensitivity. If voters are highly sensitive to electoral arrangements, if they are prone to believe that their vote choice can be observed by others, this is challenging for electoral administrators and, ultimately, for the integrity of election processes (Clark 2021).

Findings from a small but distinct literature suggests that some voter groups are indeed highly sensitive to electoral arrangements. Gerber and colleagues (2013b) show that first-time voters in the US are more likely to turn out when they receive information about protections of ballot secrecy. In Australia, which has a complicated but robust electoral system, large portions of electoral losers believe that the 2006 election was rigged (Karp et al. 2017). And an innovative field experiment from a US primary election, demonstrates that a small extra effort from election administrators – to mark a line around voting booths – generates higher levels of perceived secrecy among voters who support the minority party in the constituency, in particular when the polling station is crowded (Karpowitz et al. 2011).

This paper contributes in two ways to the emerging literature on the psychology of voting secrecy. First, we broaden the empirical scope by examining perceived voting secrecy in Sweden, a politico-administrative setting that is well-reputed internationally (Norris and Grömping 2019) and that holds high levels of trust among voters (Lundmark et al. 2020), also in a comparative perspective (Birch 2008).[[1]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn1) If voters are sensitive to the electoral arrangements in this high-turnout, high-confidence context, it provides support that voting secrecy psychology is indeed a factor to be taken into account in the design of electoral procedures. Second, we employ a research design that allows us to experimentally evaluate three levels of voting privacy arrangement under the French ballot system, modelled on Swedish practices, which is different from the Australian ballot used in the US context. The design with comparisons between low, medium-high, and high privacy offers a nuanced picture of the conditions for the voting act to be perceived as secret by voters.

Our results show that participants in the experiment perceived the medium-high privacy arrangement for voting as clearly more secret than the baseline low condition, and that the high-privacy arrangements provided even higher levels of perceived secrecy. Remarkably, as will be explained below, having to walk a few meters within the polling station holding ballot papers in hand (the medium-high privacy condition) has a significant negative effect on the experience of voting secretly compared to a more private arrangement where ballots papers can be both selected and put into sealed envelopes behind the same screening (the high privacy condition). As opposed to previous studies, we find that arrangements have main effects on all groups of participants; while our study is not directly comparable, we fail to detect corresponding conditional effects as in previous studies. Overall, our findings signal that voters are sensitive to even small variations in voting arrangements.

We begin by explaining how we used the conditions within a French ballot system to create theoretically relevant variations in the arrangements that were simultaneously perceived as realistic by the participants in the experiment. Having briefly described the Swedish context for the study, we present experimental proceedings and our expected findings. Next, we present the results of our main analyses and of additional explorations. A final section concludes and draws out implications.

**Challenges to Voting Secrecy under the French Ballot System**

Voting secrecy is primarily determined by the arrangements at polling stations. According to Teorell, Ziblatt and Lehoucq (2017), secret voting requires state-printed paper ballots, secure ballot boxes, and a secluded area in which the voter can cast his or her vote in privacy. It is the latter requirement that interests us in this article. We draw particular attention to the fact that the “secluded area” raises different logistic concerns with the so-called French ballot, i.e., one ballot paper per party and election, and the Australian ballot system, i.e., one single ballot paper per election (for an overview of ballot systems, see Massicotte et al. 2004, 122-128).

The core of the matter is that voters under the French ballot system first selects a ballot paper for their preferred party and then casts their vote (i.e., puts the ballot paper in an envelope or folds it). This poses a challenge to the arrangement of the secluded area. Whereas votes can be cast behind a shielded screen, thus keeping secret party (or candidate) choice when ballots are then dropped into the ballot box, the *selection* of ballot papers may be observable, or perceived to be observable, to others. This problem of privacy in ballot paper selection is avoided with the Australian ballot system, as all parties (candidates) are presented on one ballot paper, prepared behind one screen.

Given the multitude of factors that affect the integrity of electoral systems (Birch 2011; Norris 2015), ballot paper selection may seem a trivial problem. However, as noted, voting secrecy is ultimately about psychology. For example, different personalities can influence the way people perceive the situation: voters who are keen on keeping their vote secret may pay even more attention to do so, whereas others, if they have the opportunity, can try to show off their choice if the electoral system design allows them to. Politics may also matter for voters’ perceptions of secrecy, as shown by Karpowitz and colleagues (2011) in their study on a primary election in a Republican district in Utah that leaned heavily towards Mitt Romney.

Our examination draws on a randomized field experiment. In accordance with requirements for secret voting, participants in the experiment used state-printed ballots, cast their vote behind a shielded screen and left their vote in a secure ballot box. The only thing varied was the arrangements for selecting ballot papers. In the baseline treatment condition T1 (low privacy), participants picked ballot papers publicly before walking behind the shielded screen to prepare their vote. In the second treatment condition T2 (medium-high privacy), participants selected ballots behind a shielded screen and then walked a short distance to another shielded screen for the final preparation of the ballot. In the third condition T3 (high privacy), the shielded screens for ballot paper selection and preparation of the vote were placed next to each other, thus eliminating the short walk with ballot papers visible to onlookers. To capture voters’ experience of voting secrecy under respective treatment condition, participants filled in a short survey questionnaire immediately after having dropped their ballot in the ballot box.[[2]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn2)

Treatment conditions were modelled on the Swedish case. The baseline low-privacy treatment condition was the one that applied up to and including the most recent general election at the time of the study (in 2018), the medium-high privacy condition was installed in the latest European parliament election (in 2019), and the high-privacy condition has been under discussion as a possible reform. The study was conducted under the auspices of a government commission and administered in collaboration with the Swedish Election Authority and the Election Committee of the Municipality of Stockholm. This allowed us to set up a polling station for a fictional election that was designed as “the real deal,” lending ecological validity to the study (Andrade 2018).

Treatments are labeled to maximize clarity. However, it should be clear that even the “low privacy treatment” allows for a high level of privacy in an absolute sense, which is illustrated by the fact that Sweden's election process has been attributed with high integrity even when ballot papers were picked openly as in the low privacy treatment (Norris and Grömping 2019). It is also worth noting that voters can develop strategies to vote secretly also under the medium-high privacy treatment, for example by holding ballot papers close to the body during the short walk between the shielded screens, or by picking ballots from several parties. The limited variation between treatments means that the notion of secrecy-sensitive voters is tested under unfavorable conditions.

**The Context:  Sweden**

Sweden uses French ballots with sometimes up to one hundred different ballot papers at the polling station. The large number of ballot papers is due to characteristics of the Swedish electoral system: proportional representation (PR), which encourages a large number of parties to compete for votes; joint election days for national, regional and local elections; and an open-list system, where the voter can choose between a generic party ballot (with no names of candidates) and ballots with pre-printed lists of candidate names, from which the voter may select a preferred party representative (Hermansson 2016).

Shielding the area where ballots are selected has not been a high in priority historically in Sweden (Teorell, Ziblatt and Lehoucq 2017). However, partly as a response to critique from external election observers, arrangements for ballot selection were reformed before the 2019 EU election, introducing a shielded screen for the selection of ballot papers. At the time of our study, this system had not yet been tested in a general election. Moreover, even after the 2019 reform the selection of ballot papers remains separate from the voting booth where the vote is prepared, so voters must make a walk into or inside the polling station with ballot papers in hand (corresponding to our medium-high privacy condition).

Under discussion is also a third type of arrangement that would shield the process even further by integrating the screen for ballot picking with the voting booth, so that both the act of picking ballots and putting them inside the envelop occurs behind the same or adjacent screens*.* This would be functionally like the completely shielded Norwegian polling booths, inside of which Norwegian voters both select and cast their ballots (Regjeringen 2021). This third alternative (the high privacy condition) was in our experiment tested against the other two.

**Research design**

Our data was collected through a randomized field experiment with three treatment conditions (labelled low privacy; medium-high privacy; and high privacy), with a follow up paper-pencil survey on location to record participants’ experiences of voting secrecy as well as their social characteristics.[[2 ]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn3)The experiment was run for four consecutive days with each day divided into three two-hour slots with fifteen-minute breaks in-between to allow time for rearrangement of the polling station. Randomization was done at the level of timeslots. We applied a blocked randomized design with two specifications: each treatment should be assigned to one timeslot per day, and each treatment should be assigned to at least one “lunch slot” (i.e., the time from 11.00 to 13.00). A series of one-way ANOVAs fails to detect systematic differences between treatment groups regarding gender, age, education, native origin and post-treatments measures of political interest and political trust (see SI, Supplementary Information, Table S8 for documentation).

**Proceedings**

The experiment was conducted on October 25–28, 2020, just days before local authorities implemented stricter regulations to limit the spread of the Covid-19 virus. The Swedish Election Authority, using the experiment as an opportunity to train their organization, supplied instructions for protective measures due to the ongoing pandemic, like maintaining social distancing between participants and frequent sanitizing of interior details. The event took place in Stockholm House of Culture & City Theatre, *Kulturhuset*, a large building located right in Stockholm's political and commercial center. The setting closely mimicked a Swedish polling station in a real election.[[3]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn4)

Participants were recruited among visitors to the premises and among passers-by. Research assistants recruited voting age participants inside the building and at a nearby plaza where many people circulate. Participants were invited to take part in a study to strengthen Swedish democracy under the supervision of a government inquiry. Having signed a consent form, they were directed to the polling station where they were met by staff from the Stockholm Election Committee. After completing the voting procedure, participants filled in a short survey administered by research assistants. The standard procedure for de-briefing was to refer to a specially designed website where the results would be presented within the next weeks.

Although no representatives were elected through this mock election, the fact that the polling station was set up by the real election authorities, with real ballot papers looking exactly like in real elections, and professionally trained real election administrators receiving the votes, in combination arguably implies a high degree of authenticity for the participants. In line with this, they did find experimental arrangements credible. When surveyed about how close the experience was to voting in a real election, 84 percent responded “very” or “rather close” with no systematic difference between treatments (see Figure S1 in the SI for documentation). We therefore label this a field experiment, rather than a lab-in-the-field experiment, although it is a field experiment with a low degree of “fieldness” (Gerber and Green 2012).

Contamination between participants is always a concern in field experimental designs (Gerber and Green, 2012). However, in this case we consider that risk to be small. Stockholm is a city of ca 1 million inhabitants, the participants generally consisted of small groups of acquaintances who visited *Kulturhuset* together to take part in the regular range of activities, and there were no opportunities for the participants to interact with each other outside of the experimental setting. The same conditions apply to the participants who were recruited from people who passed by at the plaza outside the building.

**The Sample**

In total, 811 participants cast their vote over the four days whereof 802 answered the follow-up survey. The sample mirrors the voting age population in terms of gender (52 percent women), age (the median age group was 41 to 50 years old) and native origin (82 percent Swedish born). However, the sample is skewed towards the highly educated (71 percent has post-secondary education compared to 46 percent in the population at large), the politically interested (41 percent very interested compared to 17 percent in the population at large) and the trusting (68 percent high or rather high trust in politicians compared to 56 percent in the population at large). Moreover, from the aggregate outcome of the mock election, we can infer that supporters of left parties are overrepresented whereas supporters of the large mainstream parties and the anti-immigrant right-wing party (Sweden Democrats) are underrepresented, which is a pattern consistent with previous similar experimental samples in the Swedish context (Fredén 2017). Importantly, while the sample over-represents higher social strata and is left leaning, it is sufficiently diverse to allow for testing the general hypothesis (see SI, Tables S1-S7, for documentation of sample characteristics).

As documented in supplementary materials (Table S8), the treatment groups are balanced across all observed variables. This implies that any skewness within the sample does not significantly impact the primary findings of the experiment. However, we cannot discount the possibility that the estimates of absolute levels of perceived voting secrecy in each respective experimental group may be biased. This is because factors such as education, political interest, and support for left-leaning parties have been linked to a greater level of trust in the integrity of the Swedish electoral process (Johansson et al., 2021). As a result, the point estimates of perceived voting secrecy might be overly optimistic.

A limitation with the sample concerns the possibility of testing how political factors condition the results. Since we were not allowed to measure party preference of individual respondents, we cannot test whether, for example, supporters of the Sweden Democrats, by many considered a pariah party, are more sensitive to voting secrecy arrangements than other voters. Regarding conditionality, therefore, we must confine ourselves with exploring the importance of general factors such as interest in politics, and trust in politicians.

**Treatments**

Just like in a real election, participants picked ballot papers arranged in columns, one for each type of election (national, local, and regional) and identifiable by different colors (yellow for national, blue for regional, white for local), and with established parties placed in alphabetical order to the left, and fringe parties placed to the right (for illustration, see upper left corner of Figure 1). A total number of 58 different ballot papers were presented under each treatment. What distinguished the treatments was the arrangements around the boxes with ballot papers. In the low privacy treatment (T1), which represents the traditional arrangement up to and including the 2018 election, the boxes were placed in an open space observable for everyone present (upper right corner of Figure 1). Due to the restrictions caused by the pandemic, only one participant was allowed at a time to the boxes with ballot papers, which increased the degree of privacy under this treatment as compared to an ordinary election. To mimic the real-world situation, where as a rule many people visit the polling station at the same time, one principal investigator sat on a chair near and directly overlooking the table with ballot papers.

In the medium-high privacy treatment (T2), which represents the arrangement in force since the 2019 European parliamentary election, the ballot papers were shielded by a cardboard box with walls on three sides. Since the box faced a wall, ballot paper selection was for all practical purposes shielded from outside observation from all sides. However, for the final vote, participants had to walk across the polling station to another shielded area, holding ballot papers in hand (lower left corner of Figure 1). To ensure that the participants did not complete their vote in the first and protected area, the staff distributed the ballot envelopes only after the participants had picked their ballot papers.

In the high-privacy treatment (T3), the shielded areas for picking ballot papers and for preparing the vote were placed right next to each other, implying that participants did not have to walk the floor with ballot papers in hand (lower right corner of Figure 1). In principle, it was possible to complete the vote in the first protected area, but participants were encouraged by the staff to move to the second protected area to speed up the flow of voters.

Drawing on the degree of privacy provided by the three arrangements, we expect the experiment to yield the following finding:

Perceived voting secrecy will increase continuously between the three conditions of privacy of arrangements for ballot selection (T1-T3), with the largest difference between the low privacy condition (T1) and the medium-high privacy condition (T2).

Figure 1 about here

**Results**

To capture treatment effects on overall perceived voting secrecy, we primarily rely on two outcome measures. First, a five-point rating scale as response to the question “How good do you think the voting station was in order to be able to cast your vote secretly?”, ranging from “very poor” to “very good”. Second, the yes/no response to an “either-or” dichotomous question “Did you feel that you could vote secretly when you just voted?”. We focus first on the rating scale measure that allowed for a nuanced evaluation of the voting experience.[[3]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn5)

For simplicity, Figure 2 reports the percentage of participants that perceived that the arrangements of the polling station were “very good” to be able to vote secretly under respective treatment condition. Figure S2 in SI verifies that results follow the same pattern when the full five-point scale is considered, and an ordinal regression analysis (Table S9 in SI) verifies that these results hold when standard errors are clustered at the time-slot level to account for the grouplevel randomization process.[[4]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn6)

Figure 2 about here

Results confirm that ballot selection arrangements matter for voters’ experience of voting secretly. Perceived voting secrecy was highest in the high privacy condition (53 percent “very good” in terms of secrecy), and lowest in in the low-secrecy condition (27 percent “very good”), with the medium high-privacy condition falling in between (38 percent “very good”). Unexpectedly, however, the relationship between arrangements and perceived secrecy is approximately linear, meaning that the relative difference between the medium-high and high privacy conditions are larger than expected.

The dichotomous measure of perceived voting secrecy – whether it was, or was not, possible to vote secretly – generates results that are closer to expectations (see Figure 3). As before, the low privacy arrangement is associated with clearly lower levels of voting secrecy than the other conditions, but the difference between the medium-high and the high privacy conditions is smaller and only statistically significant at the .10-level (two-tailed). The proportion of respondents who felt that they could vote secretly under respective condition was 70 percent, 88 percent, and 92 percent. Conducting a logistic regression analysis with robust standard errors clustered at the timeslot level (Table S10 in SI) strengthens the results as it shows significant differences between all three treatments (with medium-high privacy as the baseline).

Figure 3 about here

The binary “either-or” measure helps to put findings in perspective. Reflecting the high overall quality of Swedish election administration, most respondents (70 percent) stated that voting secrecy was preserved also when they picked the ballot papers under conditions of low privacy, as Swedish voters traditionally have been doing. The clear difference between the low privacy and the medium-high privacy condition (with the proportion who felt that they could vote secretly increasing by 18 percentage points) shows that conditions for picking ballots contributes substantially to the overall experience of voting secretly. And the smaller but distinct difference between medium-high privacy and high privacy conditions (4 percentage points) confirm that even the detail to walk a few meters across the floor of the polling station holding ballot paper in hand makes a difference to the overall experience of voting secretly.

**Conditional effects and robustness tests**

In addition, subgroup analyses provided in the SI show that sensitivity to privacy arrangements in ballot paper selection is largely universal across social and political groups. More specifically, we find the same main effects among subjects with different levels of education (Figure S5), among men and women (Figure S6), age groups (Figure S7), and among subjects with varying levels of political trust (Figure S8) and interest in politics (Figure S9). Future studies may provide additional insights into potential moderating effects, but we find it significant that the results are so similar across groups and do not affect some more than others.

To further check the validity of our findings, we conducted automated coding of open-ended comments from participants. In support of the main analysis, latent semantic analysis (LSA) shows that respondents stressed various aspects of the voting act in the low-privacy treatment condition than in the high-privacy condition. As reported in detail in the SI (Figure S4), selection of ballot papers was a concern in the low privacy condition whereas it was not in the high privacy condition. This lends further credibility to the statistical results drawing on standardized response scales.

**Concluding discussion**

This field experiment demonstrates that voters pay close attention to the environment in which they vote. We show that even detailed institutional arrangements significantly influence voters’ experiences of voting secretly. Specifically, three different arrangements for ballot paper selection with French ballots were randomly assigned to participants: a low privacy treatment, a medium-high privacy treatment, and a high privacy treatment. Although polling stations arrangements fulfilled all other requirements for voting secrecy – state-printed ballot papers, secure ballot boxes, and a secluded area in which the final vote can be prepared – participants’ overall experience of voting secrecy was affected by the treatments. More privacy in ballot paper selection induced stronger feelings of voting secrecy, even in a system like the Swedish one where voting secrecy violations have rarely figure in the public debate.

Reflecting on the study, we note that we were not allowed the opportunity to test whether ballot paper arrangements made any difference to vote choice. Future studies should examine to what extent privacy relates to actual vote choice. Will for example so-called bandwagon effects, or support of underdog candidates (Fredén et al. 2022), be greater under a specific ballot design or polling station arrangement? For countries using the French ballot system, where the selection of ballot papers is crucial to the final decision, such questions are central to electoral outcomes.

One potential consequence of less secrecy at the booth is that people’s personalities will matter more for the choices. For example, Bäck et al (2019) show that people who have less tendency to be rejection sensitive are much more likely to influence others with their political views online. A similar mechanism may be at play at the voting booth, where, under conditions with less secrecy, less sensitive people may gain greater influence on others, especially on young voters who are more likely to be unstable in their attitudes. Other potentially fruitful avenues for further study would be to systematically vary the number of ballot papers under the French ballot system, as well as directly comparing it with a treatment that offers the voter an Australian ballot, and compare the voting outcomes under these systems. One interesting question is whether (right-wing) populist parties, such as for example the Sweden Democrats, would gain more votes under one system or the other.

Still, the most important lesson from our study concerns the relationship between the psychology of voting secrecy and electoral integrity. Results indicate that every link in the chain of events that makes up a country’s electoral system matters for voters’ overall experience. We acknowledge that French ballots are not the dominant system in current democracies; Massicotte et al.’s (2004) overview from some 20 years ago found this system in only 14 democracies worldwide.[[4]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2" \l "_ftn7) The majority of democracies using the Australian ballot should thus be immune to this particular threat to voting secrecy. However, given the high sensitivity to polling station arrangements we document among Swedish voters, they could still be affected by other nuanced differences such as how well the polling booth shields the voter from onlookers’ views (see Karpowitz et al. 2011), or how ballot papers are scrambled in the ballot box to prevent matching with the electoral roll. In other words, our findings signal to designers of election systems globally that details matter!

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**References**

Andrade C. (2018) Internal, External, and Ecological Validity in Research Design, Conduct, and Evaluation. *Indian journal of psychological medicine*, 40(5), 498–499. <https://doi.org/10.4103/IJPSYM.IJPSYM_334_18>

Birch, S. (2008) Electoral institutions and popular confidence in electoral processes: A cross-national analysis, *Electoral Studies* 27: 305-320.

Birch S. (2011) *Electoral Malpractice.* Oxford: Oxford University Press.

Bäck, E. A., Bäck, H., Fredén, A., & Gustafsson, N. (2019) A social safety net? Rejection sensitivity and political opinion sharing among young people in social media. *New Media & Society,* 21(2), 298–316. <https://doi.org/10.1177/1461444818795487>

Clark, J. T.  (2021) Lost in the mail? Vote by Mail and Voter Confidence. *Election Law Journal*, 20(4), 382–394.

Fredén A. (2017) Opinion Polls, Coalition Signals and Strategic Voting. Evidence from a Survey Experiment. *Scandinavian Political Studies* 40(3), 247–264.

Fredén A., Rheault L. and Indridason I. (2022) Betting on the underdog: The inluence of social networks on vote choice. *Political Science Research and Methods*, 1081), 198–205. doi:10.1017/psrm.2020.2

Gerber, A. S. and Green, D. (2012) *Field Experiments: Design, Analysis, and Interpretation*. New York: W.W. Norton.

Gerber AS, Huber GA, Doherty D, Dowling CM and Hill S. (2013a) Do Perceptions of Ballot Secrecy Influence Turnout? Results from a Field Experiment. *American Journal of Political Science* 57(3), 537–551.

Gerber A.S., Huber GA, Doherty D. and Dowling CM (2013b) Is There a Secret Ballot? Ballot Secrecy Perceptions and Their Implications for Voting Behavior. *British Journal of Political Science* 43(1), 77–102.

Hermansson J. (2016) The Election System. In *The Oxford Handbook of Swedish Politics* (ed.) Pierre J. Oxford: Oxford University Press, doi: 10.1093/oxfordhb/9780199665679.013.6

Irwin, G. A. and J. JM. van Holsteyn (2021) Keeping our Feet Dry: Impediments to Foreign Interference in Elections in the Netherlands. *Election Law Journal*, 20(1), 54–69.

Johansson, B., Strömbäck J., Johansson S. and Andersson F. (2021) Vulnerability and Information Influence [Sårbarhet och informationspåverkan]. Report, *JMG/The SOM Institute*, 10 December 2021. Available at https://www.gu.se/sites/default/files/2022-08/Nr89.pdf.

Karp, J., A. Nai and P. Norris (2018) Dial ‘F’ for fraud: Explaining citizens suspicions about elections, *Electoral Studies* 53: 11-19.

Karpowitz, C., J. Q. Monson, L., Nielson, K., D. Patterson and S. A. Snell (2011) Political Norms and the Private Act of Voting, *Public Opinion Quarterly* 75(4): 659-685.

Lundmark S, Oscarsson H and Weissenbilder M. (2020) Confidence in an election authority and satisfaction with democracy: Evidence from a quasi-natural experiment of a failed election in Sweden. *Electoral Studies*. 67, 2020.

Massicotte L., Yoshinaka A. and Blais A (2004) Estab*lishing the Rules of the Game: Election Laws in Democracy*. Toronto: University of Toronto Press.

Norris P. (2015) *Why Elections Fail*. Cambridge: Cambridge University Press.

Norris P. and Grömping M. (2019) Electoral Integrity Worldwide. Technical report, doi: [10.13140/RG.2.2.15294.33603](http://dx.doi.org/10.13140/RG.2.2.15294.33603)

Peeples L. (2020) COVID and the US election: Will the mail-in voting affect the result? *Nature* 586, 655 (2020). doi: <https://doi.org/10.1038/d41586-020-02979-x>

Regjeringen (2021) <https://www.regjeringen.no/en/topics/elections-and-democracy/den-norske-valgordningen/the-norwegian-electoral-system/id456636/>, accessed 25 March 2021

Teorell J., Ziblatt D. and Lehoucq F. (2017) Introduction to Special Issue: The Causes and Consequences of Secret Ballot Reform, *Comparative Political Studies* 50(5), 531–554.

Figure captures/legends

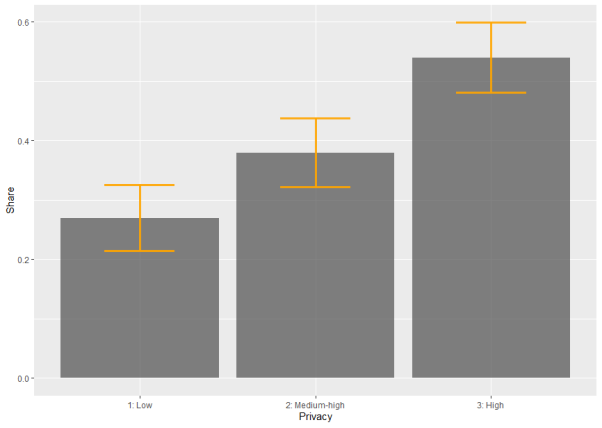
**Figure 1. Arrangements of polling stations**

**Ballot papers**  **Treatment 1 (low privacy)**

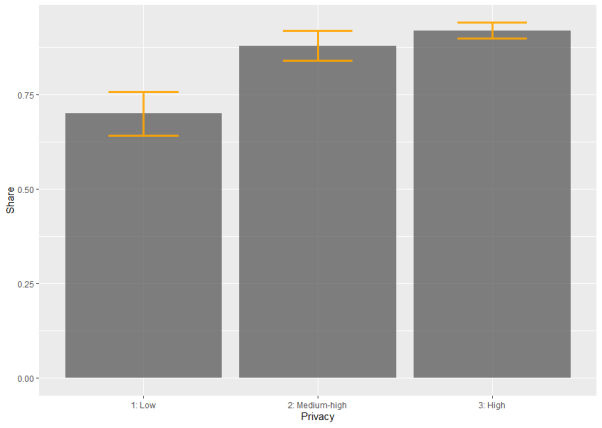
  
**Treatment 2 (Medium-high privacy)      Treatment 3 (High privacy)**



**Figure 2. Share that perceived the voting station provided “very good opportunity” to vote secretly**

**Note**: Survey question: ”How good do you think the voting station was in order to be able to cast your vote secretly?” Confidence intervals are computed using a 95 percent confidence level in two-sample test of proportions in Stata 17.0. Low privacy n=246, Medium-high privacy n=275, High privacy n=275. For the complete set of answers and shares and a control for robust standard errors, see Figure S2 and Table S9 in SI.

**Figure 3. Share that perceived that they could cast their vote secretly**



**Note**: Survey question: ”Did you feel that you could vote secretly when you voted today?” The figure shows the share of yes-responses. Confidence intervals are computed using a 95 percent confidence level in two-sample test of proportions in Stata 17.0. Low privacy n=248, Medium-high privacy n=276, High privacy n=276. For the complete set of answers and shares and a control for robust standard errors, see Figure S3 and Table S10 in SI.

1

[[1]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref1) A question about citizen confidence in the electoral system is also included in the 7th wave of the World Values Survey (2017-2022). Sweden here still comes out as being one of the countries in the world with the highest trust in its electoral system. See [https://www.worldvaluessurvey.org/WVSOnline.jsp](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_2BNWRqLHkAc99xwFHQmQNhRwBVYGpbN3GFwjbCkX6NAX6puYahZ62szKbyLxQHd7J71CCGbjZhQZwQbT26LHSFiz4JPPTauB44kwQjMdxvwdPF8bRFS5LhcKgZgX2zqUYT6vpHrP9eKdqqFHB9PapWFQfLvr13jDL4VNMcGA8GDtqikRQ4QckUynRoJ5axaaJaxyyrDhsHmTu1cVfPUiMPsGPbUd5uYD3bhsQYq29vPPesP9JqzykTeKVwdtVpwiMERZjzq6vTWve6baCzdjo5GyrLGyv).

[[2]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref2) The study was approved by the Swedish Ethical Review Authority (#2020-04937).

[[2 ]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref3)2 The government commission funding the experiment made it a condition that we refrained from asking about participants' party preferences and ideological orientation. We were also not allowed to count party vote per treatment condition. Thus, we chose to focus on the overarching hypothesis of voters’ perceptions of voting secrecy.

[[3]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref4) Other than the fact that this was a mock election, since no representatives were elected, the setup differed from a real election in two respects. First, in ordinary polling stations, the ballot papers are frequently located just outside the actual polling station. Our mock polling station therefore more resembles a typical station for early votes. Second, we did not supply any ballot papers with candidate names. This reduced the total number of ballot papers by around half.

[[3]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref5) The survey also included two other outcome variables, one concerning ballot paper selection specifically, and one making a comparison with the last national election (see questionnaire in SI, Appendix A). Results from these variables, available upon request, are very similar to the ones reported here.

[[4]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref6) Reassuringly, these results remain robust when restricting the sample to the 84 percent (657) respondents who believed the polling arrangements came ”very” or ”rather close” to experiencing a real election. Results available upon request.

[[4]](https://mc.manuscriptcentral.com/electionlaw?DOWNLOAD=TRUE&PARAMS=xik_33fq7kmrSokAhJpNo7dTZSNCjMfGFrPWKbVkfB2NFJ79nk7nZeU8rrBgeK7veuZQQB5g9J83NrgpebZs6qxpNrJxHrrxwLQ9wXAZ1Rh1GjdKnvj3jQjTkBXEnQGjaoYWAtBuWP8AHhJartBLbpGhcSKs1Q9fxBfqmphWJ3UNEcggH3N2j9hM4uq57vhTKsjwkHFt1TKVWxSgBcv9LrXsSMLG6E3NxvBnPriY5zwM6MUzsRnorfUWZtZHbx7RjR7xDdJcfT2#_ftnref7) Apart from Sweden, and France, these were: Argentina, Bulgaria, Czech Republic, Israel, Latvia, Madagascar, Malawi, Mali, Slovakia, Spain, Uruguay and Vanuatu. Norway was, probably due to missing data, not included in their sample, but should be added to the list of countries using French ballots.