

How Much GOTV Mail is Too Much? Results from a Large-Scale Field Experiment

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Abstract

This study evaluates the turnout effects of direct mail sent in advance of the 2014 New Hampshire Senate election. Registered Republican women were sent up to 10 mailings from a conservative advocacy group that encouraged participation in the upcoming election. We find that mail raises turnout, but no gains are achieved beyond five mailers. This finding is shown to be consistent with other experiments that have sent large quantities of mail. We interpret these results in light of marketing research on repetitive messaging.

Keywords: Voter turnout, field experiment, political advertising

To what extent does voter turnout rise with the volume of campaign communication? Evidence on this question is mixed. On the one hand, observational evidence suggests a positive correlation between campaign spending and voter turnout (Cox and Munger 1989), and experimental evidence lends support to the hypothesis that “noticeable reminders” stimulate turnout (Dale and Strauss 2009). On the other hand, the volume of presidential TV ads seems to have little effect on turnout (Enos and Fowler 2015; Krasno and Green 2008), and experiments that contact voters in different ways to encourage turnout seem to experience diminishing returns (for a review, see Green and Gerber 2015, 160–162).

The relationship between the volume of campaign communication and voter turnout is of special relevance to campaigns and allied organizations that have the capacity to send vast quantities of direct mail to registered voters. The Columbus

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Dispatch reported in 2012 that voters received as many as 10 mailings per day (Ludlow 2012). In 2014, one voter reported receiving over 7 pounds of mail during a primary election cycle, including 19 pieces for a County Supervisor election and 70 pieces for a State Senate seat (Sragow 2014).

Marketing research suggests that there is a non-monotonic relationship between repeated advertisements and consumer responses (Pechmann and Stewart 1988). Advertising effectiveness increases through a process of “wear-in” as consumers become more exposed to a brand but then declines through “wear-out” as repetition induces ennui (D’Souza and Rao 1995). The tension between these two effects has generated conflicting predictions regarding the optimal number of exposures. Lab and field experiments have shown advertisement effectiveness to peak at 3 (Cacioppo and Petty 1979), 5 (Johnson and Watkins 1971), or even 8 to 16 exposures (Pechmann and Stewart 1988).

The varying effectiveness of messaging may reflect the degree to which the messages provoke psychological reactance. Reactance occurs when individuals are confronted with a persuasive argument that they perceive as diminishing their freedom of choice. Individuals may act to restore their sense of autonomy by acting in opposition to the persuasive message, creating a “boomerang effect” (Brehm 1966). Reactance has been observed in the context of public health campaigns, consumer behavior, anti-littering campaigns, and television viewing habits (see Burgoon et al. 2002 for an overview). Reactance is especially pertinent to messaging campaigns that urge the receiver to abide by social norms, such as the notion that voting is a civic duty. Richard Matland and Gregg Murray contend that heavy-handed efforts to shame those who neglect to vote produce backlash (Matland and Murray 2012; Murray and Matland 2015), although it remains unclear whether reactance leads people to abstain from voting altogether, especially in the wake of “soft” social pressure mailings (see Mann 2010 and Panagopoulos 2011) such as ones discussed below.

Prior experiments provide suggestive but ambiguous evidence concerning the diminishing effects of direct mail on turnout. Three unpublished studies have tested the effects of varying quantities of mail with at least eight mailings at the upper end. Cubbison’s (2015) recent study sent as many as twelve pieces of Republican campaign mail in three state legislative districts prior to the 2014 general election but found no turnout effects whatsoever. Yuhas and Ghitza (2006) sent up to nine pieces of mail in support of the Democratic candidate prior to a 2005 gubernatorial election and found weak positive effects that seemed to crest at six mailings. Finally, Green and Gerber (2008, appendix B) describe results from a non-partisan direct mail study in the context of a 1999 municipal election in which up to eight GOTV mailings were sent. The apparent effects were positive and, again, crested at six mailings.

This study contributes to the experimental investigation of dosage effects by sending up to 10 pieces of mail to each voter. In comparison to previous studies, ours involves unusually large treatment groups assigned to each quantity of mail. We find that turnout increases with the number of mailings, but after five mailings

we see no further gains. If anything, turnout appears to be lower among those who receive 10 mailings than among those who receive five. We conclude by pooling our study with results from the previous three studies in order to assess more precisely the curvilinear relationship between mail and turnout.

STUDY CONTEXT AND DESIGN

New Hampshire held its general election for U.S. Senate, Congress, Governor, and state legislative offices on November 4, 2014. In the weeks leading up to this election, mail messages were designed and distributed by the Unlocking Potential Project (UPP), a Political Action Committee founded by Carly Fiorina to mobilize female voters for conservative candidates and causes. The decision to focus on female Republican voters was made by the PAC.¹

Mailings (see appendix) featured a mix of non-partisan encouragement, partisan advocacy, and social pressure messages. Non-partisan encouragement messages thanked voters for their participation and urged women to make their voices heard. Since UPP was not affiliated with any particular campaign, its advocacy message focused on broad electoral goals such as voting “for new leaders” rather than urging a vote for a particular candidate or party. Social pressure messages (discussed in more detail below) gently urged voters to commit to vote or expressed gratitude for past voting.

The 2014 election in New Hampshire was closely contested. The New Hampshire Senate contest was viewed as potentially pivotal to partisan control of the Senate, and the Gubernatorial election featured high-profile candidates in Democratic incumbent Maggie Hassan and Republican challenger Scott Brown, the former Senator from Massachusetts. The Senate race was the most expensive campaign in New Hampshire history at \$46 million, \$29 million of which was spent by parties, PACs, and Super PACs (Wallstin 2014).

Subjects

The UPP campaign targeted a universe of 70,402 registered Republican women voters. Only one voter per household was selected into the subject pool, which sidesteps complications associated with clustered assignment. A majority of the target universe were regular voters who voted in the 2008, 2010, and 2012 elections ($N = 41,872$). Those who voted only in 2008 and 2012 comprised another 11,119 voters, while a further 15,682 voted at least once between 2008 and 2012 but not in both Presidential elections. The remaining 1,729 subjects cast ballots in no election from 2008 to 2012. Subjects were strong partisans. Only 1.3% voted in any Democratic primary between 2006 and 2012.

¹Murray and Matland (2015) hypothesize that politically conservative voters exhibit greater reactance because they place a greater value on freedom. They also hypothesize that men exhibit greater reactance than women. Neither of these considerations motivated sample selection for this study.

Mailing		Group 1	Group 3	Group 5	Group 10	Mail Date
	1 (first)			X	X	10/10/2014
	2				X	10/13/2014
	3		X		X	10/15/2014
	4			X	X	10/17/2014
	5				X	10/21/2014
	6		X	X	X	10/23/2014
	7				X	10/24/2014
	8			X	X	10/27/2014
	9				X	10/29/2014
10 (last)	X	X	X	X	10/30/2014	

Figure 1
Sequence of Mailings, by Treatment Group

Treatments

Each voter was randomly assigned to receive zero, one, three, five, or 10 mailings. The sequencing of the mailings is diagrammed in Figure 1. Each mailer was sent at the same time to all voters assigned to receive it. The mailings all feature similar content and use the same graphical style.

Social pressure content varied across mailings but was mild in all cases. Each mailing featured a large graphic reading “Commit to Vote: November 4th, 2014.” Mailer one informed voters that “Last election, 2/3 of your friends and neighbors voted. Will you join them November 4th?” Mailer four asked voters “What are you doing [on election day]?” Mailer 10 expressed gratitude by saying “Thank YOU for voting in 2012.” These are all gentle messages that incorporate concepts of gratitude, commitment, and social pressure without seeking to elicit a strong emotional response. Similar messages have been shown to increase turnout in prior experiments (Panagopoulos 2011).

Random Assignment

Subjects were randomly allocated into five experimental mail groups. Some subjects were independently assigned to receive a GOTV phone call from a commercial phone bank, an orthogonal treatment that had no apparent effect on outcomes. For completeness, we present the mail results for both the phone call and non-phone call subgroups.²

²Within the no-mail/no-call condition, 9,529 voters were assigned to be listed on the campaign’s website to receive mail from visitors to the website. We omit these voters from the analysis below; their turnout rate (66.85%) is almost identical to that of the pure control group (66.98%).

Table 1
Voter Turnout by Number of Mailings and Assignment to Receive GOTV Phone Calls

		Number of mailings				
		Zero	One	Three	Five	Ten
All subjects	Turnout rate	66.98	66.85	67.49	68.57	67.57
	(<i>N</i>)	(31,053)	(6,874)	(6,905)	(6,856)	(6,883)
Not called by phone bank	Turnout rate	67.01	66.50	67.31	68.32	67.26
	(<i>N</i>)	(22,258)	(4,884)	(4,962)	(4,889)	(4,960)
Called by phone bank	Turnout rate	66.90	67.69	67.94	69.19	68.38
	(<i>N</i>)	(8,795)	(1,990)	(1,943)	(1,967)	(1,923)

Attrition

After the election, we received an updated voter file from the New Hampshire Secretary of State. We matched 2014 general election turnout information to 96.2% of the voters who were originally assigned to treatment or control. An analysis of attrition (see appendix) due to matching failure shows missingness bears a weak and statistically insignificant relationship to assigned treatment.

RESULTS

An Intent-to-Treat effect (ITT) is the change in the probability of voting that would occur if a voter were *assigned* to receive an additional mailing. The ITT ignores the fact that a small number of voters in the treatment group did not receive mail due to invalid addresses.³ The ITT may be estimated simply by comparing voting rates in the assigned experimental groups. These rates are presented in Table 1. For the subject pool as a whole, turnout is 67.0% in the control group. Turnout remains flat after one piece of mail (66.9%) but rises with three pieces (67.5%) and five pieces (68.6%). The full complement of 10 pieces of mail, however, produces a turnout rate of 67.6%, which is scarcely better than three pieces. This non-monotonic relationship between mailings and turnout is seen among both the no-phone call subgroup and the phone call subgroup.

Estimated effects and accompanying standard errors are obtained using regression. A linear model that simply compares voting rates in the treatment

³Like many experiments on the effects of direct mail, this study encountered a small amount of non-compliance. Approximately 3.8% of voters assigned to receive mail were found to have invalid addresses of some type. In order to preserve the symmetry between the randomly assigned treatment and control groups, no voters were dropped from our analysis, regardless of whether their addresses proved to be invalid. To convert the estimated ITT to an estimate of the average treatment effect among those who are reachable by mail, increase the estimated ITT by a factor of $1/(1-0.038) = 1.04$. Among those who assigned to received phone calls, 68% were contacted either directly or via voicemail. Here, the conversion factor from ITT to the effect among the reachable is $1/0.68 = 1.47$.

Table 2
**OLS Regression Estimates of the Effects of Mailings on Voter Turnout,
 with and without Covariates**

	Estimates (standard errors)	Estimates (standard errors)	Estimates (standard errors)
One mailing	−0.0013 (0.0063)	0.0002 (0.0051)	0.0002 (0.0051)
Three mailings	0.0051 (0.0062)	0.0028 (0.0051)	0.0028 (0.0051)
Five mailings	0.0159 (0.0063)	0.0156 (0.0051)	0.0156 (0.0051)
Ten mailings	0.0059 (0.0063)	0.0046 (0.0051)	0.0046 (0.0051)
Phone	–	–	0.0011 (0.0035)
Covariates?	No	Yes	Yes
Adjusted R-squared	0.0001	0.3379	0.3379
<i>p</i> value of joint significance of all treatments	0.115	0.044	0.078
<i>N</i>	58,571	58,571	58,571

Notes: Covariates include indicator variables reflecting voter turnout in each election since 2006, indicator variables for the number of registered voters in each subject's household, age in years, age squared, and an indicator variable that marks subjects for whom age is unknown.

groups to the voting rate in the control group is:

$$Y_i = a + b_1 M_i^{[1]} + b_2 M_i^{[3]} + b_3 M_i^{[5]} + b_4 M_i^{[10]} + u_i, \quad (1)$$

where Y_i indicates whether subject i voted, $M_i^{[j]}$ is an indicator variable for whether voter i was assigned to receive j mailings, and u_i represents unmeasured determinants of turnout.

In order to improve the precision with which the parameters $\{b_1, b_2, b_3, b_4\}$ are estimated, we control for covariates available in the voter file. These include indicator variables reflecting voter turnout in each election since 2006, indicator variables for the number of registered voters in each subject's household, age in years, age squared, and an indicator variable that marks subjects for whom age is unknown.

The results in [Table 2](#) indicate that the estimated effects of mail are scarcely affected by covariate adjustment, although adjustment does increase the R-squared, the precision of the estimates, and the joint significance of all of the estimated mail effects. Again, we see a steady progression in turnout up to five mailings and a drop-off thereafter.

The third column of [Table 2](#) estimates the effect of the phone treatment by adding an indicator variable to [Equation 1](#) that equals one when the subject was assigned to receive a phone call. Assignment to the phone treatment seems to have had a negligible effect on turnout (0.11 percentage points with a standard error of 0.35 percentage points). Interacting the phone treatment with the mail indicator variables

Table 3
**Quadratic Regression of Voter Turnout on the Number of Mailings,
 with and without Covariates**

	Estimates (standard errors)	Estimates (standard errors)	Estimates (standard errors)
Number of mailings	0.00417 (0.00201)	0.00382 (0.00164)	0.00254 (0.00103)
Number of mailings squared	-0.00034 (0.00021)	-0.00032 (0.00017)	-0.00024 (0.00010)
Covariates?	No	Yes	No
Adjusted R-squared	0.0001	0.3379	0.0917
Joint significance of mail	0.057	0.033	0.048
<i>N</i>	58,571	58,571	180,368
Results pooled with prior studies?	No	No	Yes

Covariates include indicator variables reflecting voter turnout in each election since 2006, indicator variables for the number of registered voters in each subject's household, age in years, age squared, and an indicator variable that marks subjects for which age is unknown.

does not result in a statistically significant improvement in model fit; in particular, we see no evidence that phone contact hastened the decline in returns to mail.

An alternative to using indicator variables for each assigned quantity of mail is to use a polynomial to model the effects of different dosages of mail. We fit a quadratic model in order to capture diminishing (and possibly negative) returns:

$$Y_i = a + g_1 M_i + g_2 M_i^2 + u_i, \quad (2)$$

where M_i represents the number of mailings that each subject was assigned and M_i^2 represents this number squared. We expect the parameter g_1 to be positive (because mail initially increases turnout) and g_2 to be negative (because returns diminish). Estimates of these parameters are again made more precise by controlling for the covariates mentioned above. See the appendix for a parallel analysis showing similar results using logistic regression rather than OLS.

Table 3 shows evidence of diminishing returns to mail. The one-tailed p-value of the quadratic term is 0.06 without covariates and 0.03 with covariates. Taking the derivative of this function with respect to the number of mailings and setting it to zero indicates that turnout is maximized at six mailings (the precise number is 6.1 without covariates and 5.9 with covariates). Table 3 also reports the results of a pooled regression in which our study is combined with data from the three aforementioned studies, Cubbison (2015), Yuhas and Ghitza (2006), and Green and Gerber (2008). The statistical model adds to equation (2) indicator variables for each of the three previous studies, so that each experiment in effect is given its own intercept, but the parameters relating the dosage of mail to turnout are assumed to be the same across studies.⁴ The results again suggest that mailings initially raise turnout (the estimate of g_1 is significantly greater than zero) but that returns

⁴Lacking covariate information for previous studies, we estimate only the no-covariates specification.

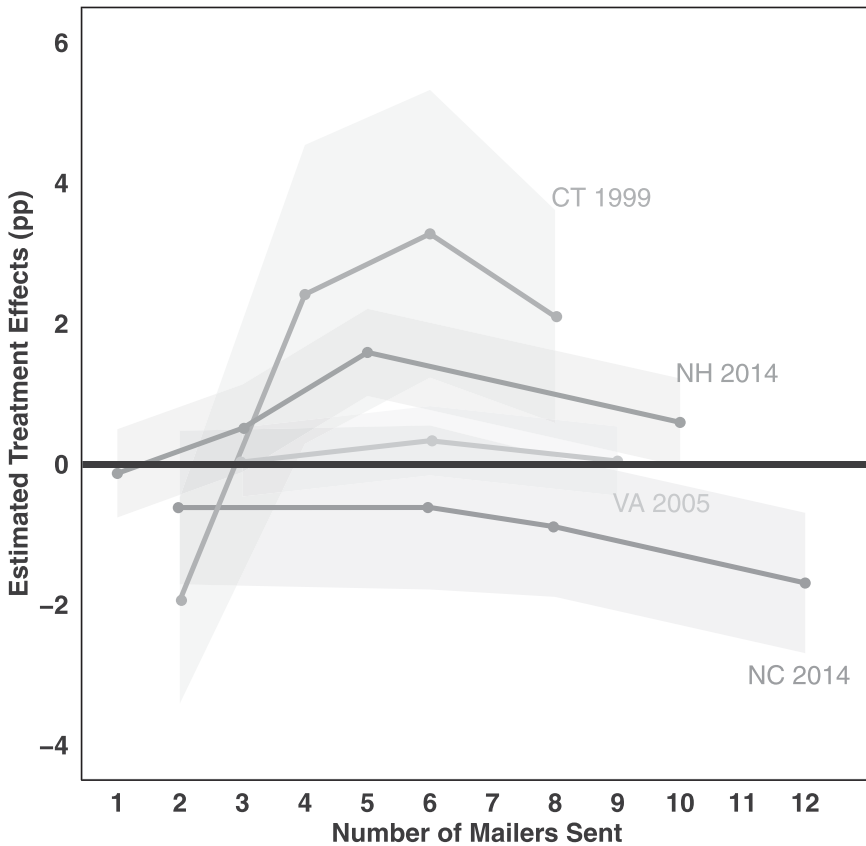


Figure 2

Four Experimental Tests Assessing the Relationship between Direct Mail and Voter Turnout (Shaded Regions Indicate One Standard Error Above and Below Difference-in-means Treatment Effect Estimates)

diminish significantly (the estimate of g_2 is significantly less than zero). The relationship between mailings and turnout crests between the fifth and sixth mailing.

DISCUSSION

Figure 2 illustrates the declining absolute effectiveness of mailings in each of the four studies. Absolute effects reach a maximum at 5–6 mailers in each study despite differences in the contexts of the four campaigns. Two campaigns were conducted by Republican campaigns targeting Republican voters; one by a Democratic campaign targeting Democratic and independent voters; and one by a nonpartisan campaign directed at a random sample of the voter file. One was conducted during

an off-cycle municipal election, one during off-cycle state-level elections, and two during federal elections.

Overall campaign spending varied as well, from over \$46 million (NH 2014) and \$42 million (VA 2005) to less than \$1 million (NC 2014) (Associated Press 2005; Kromm 2014; Wallstin 2014). Total spending per eligible voter ranged from \$45 (NH 2014) to \$17 (NC 2014) to \$10 and under (VA 2005 and CT 1999). Baseline turnout among untreated voters was 65% (NC 2014) and 67% (NH 2014) for the federal elections and 39% (CT 1999), and 35% (VA 2005) for the off-cycle elections.

With so much variation in the amount of money spent on campaigns, voters likely received varying amounts of mail during these campaigns. Why is 5–6 pieces of mail from a given source a “magic number” when voters are likely receiving many other mail pieces at roughly the same time?

Get-out-the-vote efforts by campaigns, parties, and interest groups typically target strong partisans with middling chances of turning out to vote (Hersh 2015, 92), a group found to be especially responsive to GOTV efforts (Arceneaux and Nickerson 2009). These may be the same “semi-attentive” voters who are highly susceptible to influence by persuasive messaging because they are more likely to cognize campaign communications than the inattentive, yet their opinions are more malleable than the highly attentive (McGuire 1969).

The New Hampshire election was closely contested by well-funded opponents, and standard targeting strategies would have showered moderate propensity voters in our subject pool with more mail than high or low propensity voters. If voters simply considered our mail part of a broader messaging campaign, moderate propensity voters should exhibit diminished treatment effects and perhaps less backlash against our repeated messaging than low or high propensity voters.

Figure 3 presents estimated difference-in-means treatment effects for each mail condition calculated separately by subjects’ prior propensity to vote. Treatment assignment employed block randomization by voter propensity to account for possible heterogeneous effects among voters. Figure 3 displays estimated treatment effects for Never, Sometimes, and Always Voters in our sample.⁵ Sometimes Voters’ estimated treatment effects are increasing in the amount of mail sent up to five mailers before declining. Always Voters exhibit positive treatment effects that do not appear to vary with the amount of mail sent. The few Never Voters in the sample exhibit small and imprecisely estimated treatment effects across all mail conditions. Sometimes Voters do not appear less affected by the mailers than other groups despite their likely receiving many more persuasive messages during the

⁵There were four blocking groups: Never, Irregular, Presidential, and Always Voters, each defined by turnout in the 2008, 2010, and 2012 general elections. Presidential voters were those who voted in both Presidential elections but not the 2010 Midterms, while Irregular voters turned out at least once, but not in all three elections or in both Presidential elections. For ease of interpretation, we group Irregular and Presidential voters into “Sometimes Voters.”

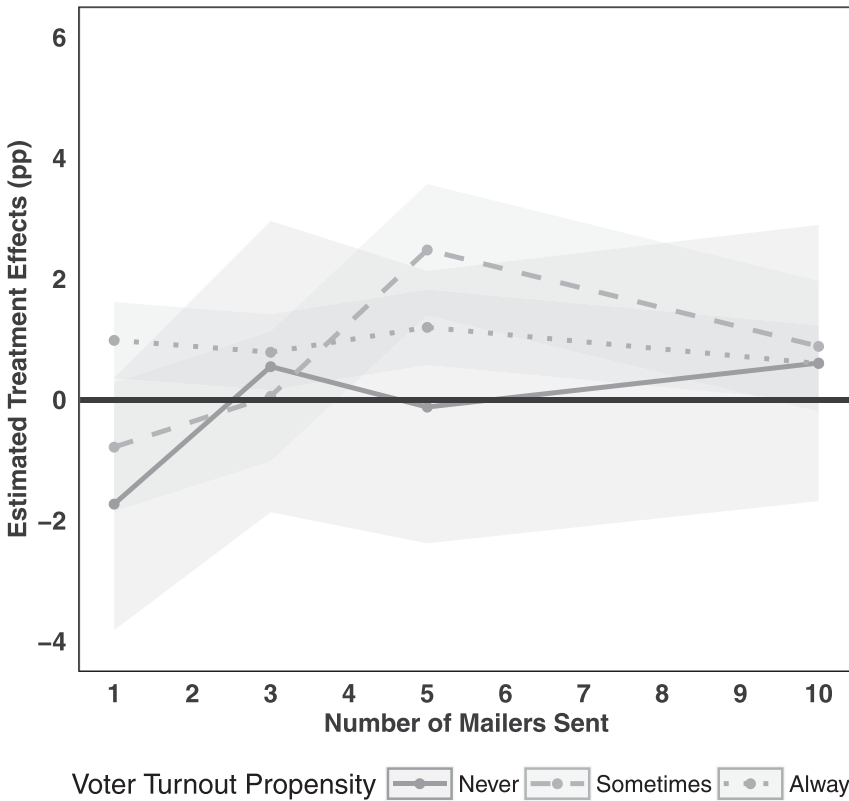


Figure 3

Estimated Treatment Effects of Mail on Turnout, by Voter Turnout Propensity (Shaded Regions Indicate One Standard Error Above and Below Difference-in-means Treatment Effect Estimates)

course of the campaign; if anything, they are more responsive. Table A5 in the Appendix reports full regression results in which treatment is interacted with voter propensity. The statistical results do not reject the null hypothesis that treatment effects are the same across the three vote propensity strata.⁶

CONCLUSION

Our results suggest that turnout does not respond monotonically to the volume of campaign communication, in keeping with marketing research on the diminishing effects of communication due to ennui or active resistance to repeated attempts at

⁶The Yuhas and Ghitza (2006) experiment also cannot reject the null hypothesis that treatment effects are the same for Never, Sometimes, and Always voters.

persuasion (Schumann and Clemons 1989; Simon and Arndt 1980). Interestingly, all four experiments to assess the effects of large quantities of mail suggest that turnout declines—as opposed to remaining flat—after five or six mailings (see Figure 2), despite marked differences across campaign contexts. Our analysis of heterogeneous effects for different types of voters suggests that subjects treat our experimental mailings as distinct from mail received from other sources. This result suggests that mail campaigns from individual groups can be influential even in the context of salient and competitive elections, but that campaign messages may become tedious when delivered repeatedly in a consistent format. The next step in this line of research is to test whether multiple mailings that convey roughly the same content become more effective when sent in different formats from different sources.

SUPPLEMENTARY MATERIALS

For supplementary material for this article, please visit Cambridge Journals Online: <https://doi.org/10.1017/XPS.2017.5>.

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